

\_\_\_\_-ORD  
\_\_/\_\_/2023

CITY OF BELLEVUE, WASHINGTON  
ORDINANCE NO. \_\_\_\_\_

AN ORDINANCE amending the Bellevue City Code to adopt certain State Building Code updates and local amendments thereto; amending Chapter 23.05 relating to construction code administration; repealing Chapter 23.10 in its entirety and replacing it with a new Chapter 23.10 reflecting amendments to state building codes; repealing Chapter 23.12 in its entirety and replacing it with a new Chapter 23.12 reflecting amendments to state residential codes; amending Chapter 23.13 to reflect amendments to the state existing buildings code; amending Chapter 23.16 to reflect amendments to swimming pool enclosures; repealing Chapter 23.50 in its entirety and replacing it with a new Chapter 23.50 reflecting amendments to state mechanical and related codes; amending Chapter 23.60 reflecting amendments to state plumbing codes; providing for severability; and establishing an effective date.

WHEREAS, RCW 19.27.031 expressly requires the City of Bellevue to adopt state building, residential, mechanical, fire, plumbing and related uniform codes; and

WHEREAS, RCW 19.27.060 provides the City with authority to amend the codes enumerated in RCW 19.27.031 as they apply within the City's corporate boundaries, provided such modifications do not result in less than the minimum performance standards and objectives contained in the state building codes; and

WHEREAS, current provisions of the Bellevue City Code adopt and rely upon various state and national codes, which have been superseded by statewide amendments (2021 editions) that become effective on \_\_\_\_\_, 2023; and

WHEREAS, the provisions of chapter 23.05 of the Bellevue City Code, Construction Code Administration, governs the City's administration and enforcement of the state and national codes; and

WHEREAS, the 2021 amendments to the state and national codes necessitate corollary amendments to the Bellevue City Code; now, therefore

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Section 23.05.040.B of the Bellevue City Code is hereby amended to read as follows:

**23.05.040 Applicability.**

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*B. Conflicting Provisions.*

1. Where there is a conflict between the provisions or requirements of this chapter, or the technical codes, and other codes or laws, this chapter, or the technical codes as the case may be, shall govern.

2. Where conflicts occur between the technical codes, those provisions providing the greater safety to life shall govern or, if life safety is not at issue, the more restrictive provision shall govern.

3. Where conflicts occur between the provisions or requirements of this chapter and the administration and enforcement provisions in the technical codes, the provisions of this chapter shall control unless those provisions do not effectuate the purpose and objectives of the administrative and enforcement provisions in the technical codes.

43. Where, in any specific case, different sections of the technical codes specify different materials, methods of construction or other requirements, the hierarchy of the codes named in RCW 19.27.031, now or as hereafter amended, shall govern. In the event that the conflict is between provisions for which such hierarchy of codes is not determinative, the most restrictive provision shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

54. Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing and manufacturer's instructions shall apply.

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Section 2. Chapter 23.05.050 of the Bellevue City Code is hereby amended, through the heading of BCC 23.05.050.E but with no amendments to the subsections of BCC 23.05.050.E, to read as follows:

**23.05.050 Existing structures.**

A. *Compliance with Technical Codes.* Buildings, structures and their building service equipment to which additions, alterations, change of use or

occupancy, relocation, or repairs are made shall comply with all the requirements of the technical codes for new facilities, except as specifically provided in this section or as provided in any other applicable section in the technical codes addressing existing structures.

**EXCEPTION:-** Work in existing buildings that is regulated by the International Existing Building Code and the International Fire Code shall comply with applicable requirements in both codes. However, where conflicts occur between the International Existing Building Code and the International Fire Code, the requirements of the International Fire Code shall prevail.

B. Buildings not Previously Occupied. A building or portion of a building that has not been previously occupied or used for its intended purpose, in accordance with the laws in existence at the time of its completion, shall be permitted to comply with the provisions of the laws in existence at the time of its original permit unless such permit has expired. Subsequent permits shall comply with the technical codes, as applicable, for new construction.

CB. Additions, Alterations, Change of Use or Occupancy, or Repairs to Previously Occupied Buildings.

1. Additions, alterations, change of use or occupancy, or repairs may be made to a previously occupied building, structure, or its building service equipment without requiring the existing building, structure, or its building service equipment to comply with all the requirements of the technical codes for new construction, provided the addition, alteration, change of use or occupancy, or repair conforms to the requirements of the technical codes for an existing building, structure, or its building service equipment. Additions, alterations, change of use or occupancy, or repairs shall not be made to an existing building, structure, or building service equipment which will cause the existing building, structure, or building service equipment to be in violation of the provisions of the technical codes, nor shall such additions, alterations, change of use or occupancy, or repairs cause the existing building, structure, or building service equipment to become unsafe.

2. Building service equipment which was lawful under the technical codes current at the time such equipment was installed may be used, maintained or repaired if the use, maintenance or repair is in accordance with the original design and a hazard to life, health or property has not been created by such building service equipment.

~~D.C. Existing Occupancy.~~ The legal occupancy of any structure existing on the date of adoption of this chapter and the technical codes shall be permitted to continue without change, except as is specifically covered in this chapter and the technical codes, the International Fire Code, or if continued use poses a danger to life, health and safety of the occupants and the public, as is determined by the building official or fire official.

~~D. Change in Use. No change will be made in the character of occupancies or use of any building that would place the building in a different division of the same group or occupancy or in a different group of occupancies, unless such building is made to comply with the requirements of this chapter and the technical codes for such division or group of occupancy.~~

~~**Exception:** The character of the occupancy of existing buildings may be changed subject to the approval of the building official, and the building may be occupied for purposes in other groups without conforming to all the requirements of this chapter and the technical codes for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.~~

~~No change in the character of occupancy of a building shall be made without a certificate of occupancy, as required in BCC 23.05.140. The building official may issue a certificate of occupancy pursuant to the intent of the above exception without certifying that the building complies with all provisions of this code.~~

E. ~~Relocated~~*Moved* Buildings or Structures.

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Section 3. Chapter 23.05.100.E of the Bellevue City Code, at sections BCC 23.05.100.E.1 and 23.05.100.E.2, is hereby amended to read as follows:

**23.05.100.E. Expiration of Permit.**

1. Every permit issued by the building official under the provisions of this chapter shall expire by limitation and become null and void if the building or work authorized by such permit is not commenced within one year from the date of such permit issuance, or if work authorized by the issued permit is suspended or abandoned for a period of 180 days or more after the work is commenced. The building official may extend single-family permits that have expired under this section for additional periods of up to 180 days at his sole discretion, provided:

- a. No significant changes have or will be made to the originally approved plans and specifications for the approved work; and
- b. No permit shall be extended past the maximum limit stated in subsection (E)(2) of this section from the date of permit issuance.

**EXCEPTIONS TO BCC 23.05.100.E.1:**

- 1. Building, mechanical, electrical, and plumbing permits included in a phasing plan per BCC 23.05.090.f.3.a may be extended by the building official to expire on the expiration date of the last issued building permit (not including mechanical, electrical, or plumbing permits) approved in the phasing plan.
- 2. Building permits that have received a Temporary Certificate of Occupancy shall expire in accordance with the duration of the Temporary Certificate of Occupancy.

2. Permits issued under which work is started and continuously performed, and the necessary periodic inspections are made, such that the permit does not expire according to subsection (E)(1) of this section, shall expire by limitation and become null and void three years from the date of such permit issuance, except that the building official may grant single-family permits one extension of up to 90 days at his sole discretion.

**EXCEPTIONS TO BCC 23.05.100.E.2:**

- 1. Building, mechanical, electrical, and plumbing permits included in a phasing plan per BCC 23.05.090.f.3.a may be extended by the building official to expire on the expiration date of the last issued building permit (not including mechanical, electrical, or plumbing permits) approved in the phasing plan.
- 2. Building permits that have received a Temporary Certificate of Occupancy shall expire in accordance with the duration of the Temporary Certificate of Occupancy.

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Section 4. Chapter 23.05.130.C of the Bellevue City Code is hereby amended by adding a new subsection 9 and to read as follows:

**23.05.130 Inspections.**

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9. Types IV-A, IV-B and IV-C connection protection inspection. In buildings of Types IV-A, IV-B and IV-C construction, where connection fire-resistance ratings are provided by wood cover calculated to meet the requirements of Section 2304.10.1 of the *International Building Code* as adopted and amended by the City of Bellevue, inspection of the wood cover shall be made after the cover is installed, but before and other coverings or finishes are installed.

109. Lath Inspection and Gypsum Board Inspection. Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, are in place, but before any plastering is applied or gypsum board joints and fasteners are taped and finished.

**Exception:** Gypsum board that is not part of a fire-resistance rated assembly or a shear assembly.

1140. Fire-Resistant Penetration Inspections. Protection of joints and penetrations in fire-resistance-rated assemblies shall not be concealed from view until inspected and approved.

1244. Energy Efficiency Inspection.

a. Envelope.

i. Wall Insulation Inspection. To be made after all wall insulation and air vapor retarder sheet or film materials are in place, but before any wall covering is placed.

ii. Glazing Inspection. To be made after glazing materials are installed in the building.

iii. Exterior Roofing Insulation. To be made after the installation of the roof insulation, but before concealment.

iv. Slab/Floor Insulation. To be made after the installation of the slab/floor insulation, but before concealment.

- b. Mechanical.
  - i. Mechanical Equipment Efficiency and Economizer. To be made after all equipment and controls required by this chapter and the technical codes are installed and prior to the concealment of such equipment or controls.
  - ii. Mechanical Pipe and Duct Insulation. To be made after all pipe and duct insulation is in place, but before concealment.
- c. Lighting and Motors.
  - i. Lighting Equipment and Controls. To be made after the installation of all lighting equipment and controls required by this chapter and the technical codes, but before concealment of the lighting equipment.
  - ii. Motor Inspections. To be made after installation of all equipment covered by the energy code, but before concealment.

**1312.** Electrical. The building official may require special inspection of equipment or wiring methods under the following conditions:

- a. Where the installation requires special training, equipment, expertise, or knowledge;
- b. Where there is insufficient evidence of compliance with the provisions of this code;
- c. Where the material or method does not conform to the requirements of this code; or
- d. To substantiate claims for alternative materials or methods.

Where such special inspection is required, it shall be performed by an accredited electrical products testing laboratory approved by the state of Washington under WAC 296-46B-999 and acceptable to the building official. The special inspection person/agency shall be designated and approved prior to beginning the installation of wiring or equipment. A written report from the designated special inspection agency indicating that the installation conforms to the appropriate codes and standards shall be received by the building official prior to that installation being approved. All costs for such testing and reporting shall be the responsibility of the permit holder.

1413. Final Inspection. The final inspection shall be made after all work required by the permit is completed.

Section 5. Chapter 23.05.140.A of the Bellevue City Code is hereby amended to read as follows:

A. *Use and Occupancy*. No building or structure shall be used or occupied, and no change in the existing use or occupancy classification of a building or structure or portion thereof shall be made, until the building official has issued a certificate of occupancy therefor as provided herein. No change of use or occupancy may be made that would place the building in a different division of the same group or occupancy or in a different group of occupancies, unless such building is made to comply with the requirements of this chapter and the technical codes for such division or group of occupancy. However, the building official may approve a change of use or occupancy that does not conform to all requirements of this chapter and the technical codes, and may issue a certificate of occupancy for such change of use or occupancy, if the building official determines that the new or proposed use or occupancy is less hazardous, based on life and fire risk, than the existing use. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this chapter, the technical codes, or of other ordinances of the city. Certificates presuming to give authority to violate or cancel the provisions of this chapter, the technical codes or other ordinances of the city shall not be valid.

Exception: For single-family dwellings and their accessory structures, the issued building permit inspection record shall serve as the certificate of occupancy when the final inspection has been approved by the building official or the building official's designee.

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Section 6. Chapter 23.10 of the Bellevue City Code is hereby repealed in its entirety and replaced with a new Chapter 23.10 to read as follows:

**Chapter 23.10  
BUILDING CODE**

**Sections:**

- 23.10.010 Amendments and adoptions.
- 23.10.015 Amendments, additions, or exceptions to the 2021 International Building Code.



- 23.10.202 International Building Code Section 202 amended – Definitions. Standby power system; Water supply.
- 23.10.403.2.1.1 International Building Code Section 403.2 amended – Type of construction.
- 23.10.403.3 International Building Code Section 403.3 amended – Automatic sprinkler system.
- 23.10.403.4.8 International Building Code Section 403.4.8 amended – Standby and emergency power.
- 23.10.403.5 International Building Code Section 403.5 amended – Means of egress and evacuation.
- 23.10.403.6.1 International Building Code Section 403.6.1.1 Added -- Machine rooms.
- 23.10.403.7 International Building Code Section 403.7 added – Smoke control.
- 23.10.404.7 International Building Code Section 404.7 amended – Emergency power.
- 23.10.405.1 International Building Code Section 405.1 amended –General.
- 23.10.405.4.3 International Building Code Section 405.4.3 amended – Elevators.
- 23.10.405.8 International Building Code Section 405.8 amended – Standby and emergency power.
- 23.10.503.1.4.1 International Building Code Section 503.1.4.1 amended – Enclosures over occupied roof areas.
- 23.10.504.4.1 International Building Code Section 504.4.1 amended – Stair enclosure pressurization increase.
- 23.10.706.1 International Building Code Section 706.1 amended – General
- 23.10.903.2.11 International Building Code Section 903.2.11 amended to add a new Section 903.2.11.8 Buildings exceeding 10,000 square feet.
- 23.10.903.3 International Building Code Section 903.3 amended – Installation requirements.
- 23.10.903.3 International Building Code Section 903.3 amended to add a new Section 903.3.9 – Fire sprinkler zones.
- 23.10.903.3.1 International Building Code Section 903.3.1 amended – Standards.
- 23.10.903.3.1.1 International Building Code Section 903.3.1.1 amended – NFPA 13 sprinkler systems.
- 23.10.903.3.1.2 International Building Code Section 903.3.1.2 amended – NFPA 13R sprinkler systems.
- 23.10.903.3.9 International Building Code Section 903.3.9 added - Zones
- 23.10.903.4.3 International Building Code Section 903.4.3 amended – Floor control valves.
- 23.10.903.5 International Building Code Section 903.5 amended – Testing and maintenance.
- 23.10.905.3 International Building Code Section 905.3 amended – Required installations.

- 23.10.905.3.1 International Building Code Section 905.3.1 amended – Height.
- 23.10.905.3.9 International Building Code Section 905.3.9 added – High-rise building standpipes; and Section 905.3.10 added – Vertical standpipes served by fire pumps.
- 23.10.905.4 International Building Code Section 905.4 amended – Location of Class I standpipe hose connections.
- 23.10.905.8 International Building Code Section 905.8 amended – Dry standpipes.
- 23.10.907.1 International Building Code Section 907.1 amended – General.
- 23.10.907.1.2 International Building Code Section 907.1.2 amended – Fire alarm shop drawings.
- 23.10.907.2.7.1 International Building Code Section 907.2.7.1 deleted – Occupant notification.
- 23.10.907.2.13.1.1 International Building Code Section 907.2.13.1.1 amended – Area smoke detection.
- 23.10.907.2.13.2 International Building Code Section 907.2.13.2 deleted – Fire department communication system.
- 23.10.907.2.18.1 International Building Code Section 907.2.18.1 amended – Smoke detectors.
- 23.10.907.5.2.1.1 International Building Code Section 907.5.2.1.1 amended – Average sound pressure.
- 23.10.907.5.2.2.5 International Building Code Section 907.5.2.2.5 amended – Standby power.
- 23.10.907.5.2.2.6 International Building Code Section 907.5.2.2.6 added – Phased evacuation.
- 23.10.907.5.2.3 International Building Code Section 907.5.2.3 amended – Visible alarms.
- 23.10.907.6.3.1 International Building Code Section 907.6.3.1 amended – Annunciator panel.
- 23.10.909.10.2 International Building Code Section 909.10.2 amended – Ducts.
- 23.10.909.10.3 International Building Code Section 909.10.3 amended – Equipment, inlets and outlets.
- 23.10.909.11 International Building Code Section 909.11 amended – Emergency power.
- 23.10.909.12 International Building Code Section 909.12 amended – Detection and control systems.
- 23.10.909.18.3.3.2 International Building Code Section 909.18.3.3.2 added– Certificate of compliance.
- 23.10.909.20 International Building Code Section 909.20 amended – Smokeproof enclosures.
- 23.10.909.20.7.2 International Building Code Section 909.20.6.2 amended – Emergency power.
- 23.10.909.20.7.3 International Building Code Section 909.20.6.3 amended – Acceptance and testing.

- 23.10.911.1.2 International Building Code Section 911.1.12 amended – Separation and penetrations.
- 23.10.912.5 International Building Code Section 912.5 amended – Signs.
- 23.10.913.1 International Building Code Section 913.1 amended – General.
- 23.10.913.2 International Building Code Section 913.2 amended – Protection against interruption of service.
- 23.10.919 International Building Code Section 919 Added – Firefighter air systems.
- 23.10.1008.2.3 International Building Code Section 1008.2.3 amended – Exit discharge.
- 23.10.1008.3.4 International Building Code Section 1008.3.4 amended – Duration.
- 23.10.1009.8.1 International Building Code Section 1009.8.1 amended – System requirements.
- 23.10.1011.12.2 International Building Code Section 1011.12.2 amended – Roof access.
- 23.10.1026 International Building Code Section 1026 amended – Horizontal exits.
- 23.10.1105.1.1 International Building Code Section 1105.1.1 amended – Automatic doors.
- 23.10.1607.3 International Building Code Section 1607.3 amended to add subsection 1607.3.1 – Floor and roof design load posting.
- 23.10.1607.7.5 International Building Code Section 1607.7.5 amended – Posting.
- 23.10.1608.1 International Building Code Section 1608.1 deleted and replaced – Roof snow loads.
- 23.10.1608.2 International Building Code Section 1608.2 deleted and replaced – Ground snow loads.
- 23.10.1612.2 International Building Code Section 1612.2 amended – Design and construction.
- 23.10.1612.3 International Building Code Section 1612.3 amended – Establishment of flood hazard areas.
- 23.10.1612.4 International Building Code Section 1612.4 amended – Flood hazard documentation.
- 23.10.1613.1 International Building Code Section 1613.1 amended – Scope.
- 23.10.1704.2 International Building Code Section 1704.2 amended – Special inspections and tests.
- 23.10.1704.2.3 International Building Code Section 1704.2.3 amended - Statement of special inspections.
- 23.10.1704.6 International Building Code Section 1704.6 amended – Structural observations.
- 23.10.2701 International Building Code Section 2701 amended – General.
- 23.10.2702 International Building Code Section 2702 amended – Emergency and standby power systems.

- 23.10.2801.1 International Building Code Section 2801.1 Amended – Scope.
- 23.10.3007.1 International Building Code Section 3007.1 Amended – General.
- 23.10.3007.6.2 International Building Code Section 3007.6.2 Amended – Lobby enclosure.
- 23.10.3007.8 International Building Code Section 3007.8 Amended – Electrical power.
- 23.10.3007.10 International Building Code Section 3007.10 Added – Phase I emergency recall operation.
- 23.10.3008.6 International Building Code Section 3008.6 amended – Occupant evacuation elevator lobby.
- 23.10.3008.8 International Building Code Section 3008.8 Amended – Electrical power.
- 23.10.3102.8.2 International Building Code Section 3102.8.2 amended – Standby power.
- 23.10.3116 Washington State Building Code Section 3116 amended – Fixed guideway transit and passenger rail systems.
- 23.10.3304.1 International Building Code Section 3304.1.5 added – Excavation and shoring near improved public places.
- 23.10.3306.1 International Building Code Table 3306.1 amended – Protection of pedestrians.
- 23.10.3306.2 International Building Code Section 3306.2 amended – Walkways.

**23.10.010 Amendments and adoptions.**

The following codes, all as amended, added to, or excepted in this chapter, together with all amendments and additions provided in this title, are adopted and shall be applicable within the City of Bellevue:

A. International Building Code.

1. Code Adoption. The 2021 Edition of the *International Building Code* published by the International Code Council, as adopted and amended by the State Building Code Council in Chapter 51-50 WAC, excluding Chapter 1, “Administration,” including Appendix E, and including the 2017 Edition of the International Code Council A117.1, is adopted, and shall be applicable within the City, as amended, added to and excepted in this chapter. Those sections of the 2021 Edition of the *International Building Code* that are not being adopted by the City (except Chapter 1 referenced above) are listed in consequential order with the City’s local amendments. The 2021 *International Swimming Pool and Spa Code* published by the International Code Council, as adopted and amended in WAC 51-50-3109, shall be applicable within the City.

2. Scope. The provisions of the *International Building Code* as adopted, amended, added to, or excepted in this chapter shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures, except where such work is regulated by the 2021 *International Existing Building Code*.

**Exception:** Detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures not more than three stories above grade plane in height shall comply with the *International Residential Code*.

B. Washington State Energy Code.

1. Code Adoption. The *Washington State Energy Code*, as provided in RCW 19.27A.020 and as adopted by the State Building Code Council in Chapter 51-11C WAC, including Appendices A, B, C, and D, and Chapter 51-11R WAC, including Appendices RA, RB, and RC, is adopted and shall be applicable within the City, as amended, added to, or excepted in this chapter.

C. Adoption by Reference. All codes, standards, rules and regulations adopted by this section are adopted by reference thereto and by this reference fully incorporated herein. Not less than one copy of each code, standard, rule or regulation, in the form in which it was adopted, shall be filed in the city clerk's office and be available for use and examination by the public.

**23.10.015 Amendments, additions, or exceptions to the 2021 International Building Code.**

Pursuant to RCW 19.27.060, the following contains amendments, additions, or exceptions to the *International Building Code* applicable and enforceable within the City of Bellevue.

**23.10.202 International Building Code Section 202 amended – Definitions.**

International Building Code Section 202 is hereby amended to read as follows:

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[F] **B. LEGALLY REQUIRED STANDBY POWER SYSTEM.** All references to standby power systems shall mean legally required power systems in accordance with the *Washington Cities Electrical Code*, and shall be in accordance with Chapter 27 legally required

**Commented [SG1]:** Modifying backup power definition to match National Electrical Code definition.

standby power, as Aa source of *automatic* electric power of a required capacity and duration to operate required building, *hazardous materials* or *ventilation* systems in the event of a failure of the primary power. Legally required S standby power systems are required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

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[F] C. WATER SUPPLY. The source and delivery system supplying the required flow (gpm) and pressure (psi) to a sprinkler system or other fire protection system/equipment.

Commented [SG2]: Adding definition to align with Firefighting operations.

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**23.10.403.2.1.1 International Building Code Section 403.2.1.1 amended – Type of construction.** International Building Code Section 403.2.1.1 is hereby amended to read as follows:

**403.2.1.1. Type of construction.**

The following reductions in the minimum *fire-resistance rating* of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 m) in *building height*, the *fire-resistance rating* of the building elements in Type IA construction shall be permitted to be reduced to the minimum *fire-resistance ratings* for the building elements in Type IB.

**Exception:** The required *fire-resistance rating* of columns supporting floors structural frame and bearing walls shall not be reduced.

Commented [SG3]: Consistency with prior Bellevue amendment for three prior code editions and consistency with City of Seattle.

2. In other than Group F-1, H-2, H-3, H-5, M and S-1 occupancies, the *fire-resistance rating* of the building elements in Type IB construction shall be permitted to be reduced to the *fire-resistance ratings* in Type IIA.

3. The *building height* and *building area* limitation of a building containing building elements with reduced *fire-resistance ratings* shall be permitted to be the same as the building without such reductions.

**23.10.403.3 International Building Code Section 403.3 amended – Automatic sprinkler system.** International Building Code Section 403.3 is hereby amended to read as follows:

**[F] 403.3 Automatic sprinkler system.** Buildings and structures shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 403.3.3.

~~**Exception:** An automatic sprinkler system shall not be required in spaces or areas of telecommunications equipment 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 fire 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 or not less than 2-hour horizontal assemblies constructed in accordance with Section 711, or both.~~

**[F] 403.3.1 Number of sprinkler risers and system design.** Each sprinkler system zone in buildings that are more than 420 feet (128 m) in *building height* shall be supplied by not fewer than two risers. Each riser shall supply sprinklers on alternate floors. If more than two risers are provided for a zone, sprinklers on adjacent floors shall not be supplied from the same riser.

**[F] 403.3.1.1 Riser location.** Sprinkler risers shall be placed in *interior exit stairways* and ramps that are remotely located in accordance with Section 1007.1.

**[F] 403.3.2 Water supply to required fire pumps.** In all buildings that are more than 420 feet in *building height*, and buildings of Type IV-A and IV-B construction that are more than 120 feet (37 m) in *building height*, required fire pumps shall be

**Commented [SG4]:** All amendments in Sections 403 High-rise, 404 Atrium, and 405 Underground buildings are to:  
- Align w/ Int'l Fire Code and Firefighting operations  
- Align w/ National Electrical Code  
- Align w/ Light-rail code provisions (NFPA 130)  
- Protect critical fire/life-safety equipment & systems

supplied by connections to no fewer than two water mains located in different streets and shall not serve other buildings. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

**Exception:** When approved by the fire code official, two connections to the same main shall be permitted provided the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through no fewer than one of the connections.

~~**[F] 403.3.3 Secondary water supply.** An automatic secondary on-site water supply having a capacity not less than the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings assigned to Seismic Design Category C, D, E or F as determined by Section 1613. An additional fire pump shall not be required for the secondary water supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump supplying the automatic sprinkler system. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.~~

~~**[F] 403.3.3 Secondary water source.** An automatic secondary on-site water source shall be provided for high-rise building as follows:~~

- ~~1. High-rise buildings containing R or B occupancies only shall be provided with a net usable volume of 15,000 gallons.~~
- ~~2. High-rise buildings containing an S-2 occupancy shall be provided with a net usable volume of 40,000 gallons.~~
- ~~3. High-rise buildings containing an M occupancy shall be provided with a net usable volume of 50,000 gallons.~~
- ~~4. Multi high-rise complexes that are less than 420 feet in height may share a common secondary water source by combining the highest demand of item 2 or 3 above.~~



with number 1 above. Only one parking/retail area and two high-rise buildings may share a common secondary water source.

An acceptable alternative to items 1 through 4 above is to prove a calculated net useable volume capable of meeting the hydraulically calculated sprinkler demand, including the total (combined inside and outside) hose stream requirement, as per NFPA 13. The duration of the calculated source shall have a duration of not less than 30 minutes for buildings with light hazard occupancies only and a 60-minute duration for buildings with ordinary hazard occupancies as defined by NFPA 13.

**Exception:** Existing buildings, including those undergoing substantial renovation.

**[F] 403.3.4 Fire pump room.** Fire pumps shall be located in rooms protected in accordance with Section 913.2.1.

**[F] 403.3.5 High-rise building sprinkler system design.**  
Combination standpipe/sprinkler risers using 6-inch pipe minimum, shall be used. Shut-off valves and water-flow devices shall be provided on each floor at the sprinkler system connection to each standpipe. Two four-way fire department connections serving the combination system shall be provided on separate streets well separated from each other. At least one of the fire department connections shall be connected to the riser above a riser isolation valve. Dry pipe sprinkler systems serving parking garages may use one separate two-way fire department connection. The dry pipe sprinkler system shall be supplied by the on-site water tank.

**23.10.403.4.8 International Building Code Section 403.4.8 amended – Standby and emergency power.** International Building Code Section 403.4.8 is hereby amended to read as follows:

**403.4.8 Legally required Standby and emergency power.** A legally required standby power system complying with Section 2702 and Section 3003 shall be provided for the standby power loads specified in Table 2702~~Section 403.4.8.3,~~ and A~~n~~ emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in ~~Section 403.4.8.4~~-Table 2702.

**403.4.8.1 Equipment room.** If the [legally required](#) standby or emergency power system includes a generator set inside a building, the system shall be [in accordance with Section 2702.1.8](#)~~located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.~~ System supervision with manual start and transfer features shall be provided at the ~~fire command center~~.

**Exception:** In Group I-2, Condition 2, manual start and transfer features for the critical branch of the emergency power are not required to be provided at the *fire command center*.

**403.4.8.1.1 Penetrations.** [Penetrations into and openings through an equipment room containing a legally required standby or emergency generator set inside a building are prohibited except for required exit doors, equipment and ductwork necessary for heating, cooling or ventilation, sprinkler branch line piping, or electrical raceway serving the generator set equipment room or being served by the generator set. Such penetrations shall be protected in accordance with Section 714.](#)

**Exception:** [Metallic piping with no joints or openings where it passes through the generator set equipment room.](#)

**403.4.8.2 Fuel line piping protection.** Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in by one of the following methods:

1. A fire-resistant pipe-protection system that has been tested in accordance with UL 1489. The system shall be installed as tested and in accordance with the manufacturer's installation instructions, and shall have a rating of not less than 2 hours. Where the building is protected throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1, the required rating shall be reduced to 1 hour.

2. An assembly that has a *fire-resistance rating* of no less than 2 hours. Where the building is protected throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the required fire-resistance rating shall be reduced to 1 hour.

3. Other approved methods.

**[F] 403.4.8.3 Legally required Standby power loads.** Legally required standby power loads shall be classified in accordance with Section 2702 and Table 2702.

The following are classified as standby power loads:

- ~~1. Ventilation and automatic fire detection equipment for smokeproof enclosures.~~
- ~~2. Elevators.~~
- ~~3. Where elevators are provided in a high-rise building for accessible means of egress, fire service access or occupant self-evacuation, the standby power system shall also comply with Sections 1009.4, 3007 or 3008, as applicable.~~
- ~~4. Sump pumps required by ASME A17.1 serving pit drains at the bottom of elevator hoistways of fire service access or occupant evacuation elevators.~~

**[F] 403.4.8.4 Emergency power loads.** Emergency power loads shall be classified in accordance with Section 2702 and Table 2702.

The following are classified as emergency power loads:

- ~~1. Exit signs and means of egress illumination required by Chapter 10.~~
- ~~2. Elevator car lighting.~~
- ~~3. Emergency voice/alarm communications systems.~~
- ~~4. Automatic fire detection systems.~~
- ~~5. Fire alarm systems.~~
- ~~6. Electrically powered fire pumps.~~
- ~~7. Power and lighting for the fire command center required by Section 403.4.6.~~

**23.10.403.5 International Building Code Section 403.5 amended – Means of egress and evacuation.** International Building Code Section 403.5 is hereby amended to read as follows:

**403.5 Means of egress and evacuation.** The *means of egress* in *high-rise buildings* shall comply with Sections 403.5.1 through 403.5.5, and Bellevue City Code 23.11.907.5.2.2.6, which requires either Phased Evacuation, an additional stair, or occupant evacuation elevators, to facilitate simultaneous building evacuation and firefighter response into the building.

**403.5.1 Remoteness of interior exit stairways.** Required *interior exit stairways* shall be separated by a distance not less than 30 feet (9144 mm) or not less than one-fourth of the length of the maximum overall diagonal dimension of the building or area to be served, whichever is less. The distance shall be measured in a straight line between the nearest points of the enclosure surrounding the *interior exit stairways*. In buildings with three or more *interior exit stairways*, not fewer than two of the *interior exit stairways* shall comply with this section. Interlocking or *scissor stairways* shall be counted as one *interior exit stairway*.

**403.5.2 Additional interior exit stairway.** For buildings other than Group R-2 and their ancillary spaces that are more than 420 feet (128 m) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total capacity of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total capacity required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

**Exceptions:**

- 1) An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.
- 2) An additional *interior exit stairway* shall not be required for other portions of the building where the highest occupiable floor level in those areas is less than 420 feet (128 m) in *building height*.

**403.5.3 Stairway door operation.** *Stairway* doors other than the *exit discharge* doors shall be permitted to be locked from the *stairway* side. *Stairway* doors that are locked from the *stairway* side shall be capable of being unlocked simultaneously without unlatching upon a signal from the *fire command center*.

**403.5.3.1 Stairway communication system.** A telephone or other two-way communications system connected to an *approved constantly attended station* shall be provided at not less than every fifth floor in each *stairway* where the doors to the *stairway* are locked.

**403.5.4 Smokeproof enclosures.** Every required *interior exit stairway* serving floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be a *smokeproof enclosure* in accordance with Sections 909.20 and 1023.12. Where *interior exit stairways* and ramps are pressurized in accordance with Section 909.20.5, the smoke control pressurization system shall comply with the requirements specified in Section 909.6.3.

[Exception: Unless required by other sections of this code, portions of such stairways which extend to serve floors below the level of exit discharge need not comply with Sections 909.20 and 1023.12 provided the portion of the stairway below is separated from the level of exit discharge with a 1-hour fire barrier.](#)

**403.5.5 Luminous egress path markings.** Luminous egress path markings shall be provided in accordance with Section 1025.

**23.10.403.6.1 International Building Code Section 403.6.1.1 Added -- Machine rooms.** International Building Code Section 403.6.1 is hereby amended to add a new subsection 403.6.1.1 to read as follows:

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, not fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3,500 pounds (1588 kg) and shall comply with Section 3002.4.

[23.10.403.6.1.1 Machine rooms. Each fire service access elevator shall be served by a different machine room or control room.](#)

**23.10.403.7 International Building Code Section 403.7 Added -- Smoke control.** International Building Code Section 403 is hereby amended to add a new subsection 403.7 to read as follows:

....

[403.7 Smoke control. A smoke-control system meeting the requirements of Section 909 shall be provided in all areas containing a Group I or Group R occupancy within high-rise buildings. Such](#)

[areas shall be separated in accordance with Section 709 and Section 909 to create separate smoke zones, or smoke control shall be provided in all such unseparated areas of the building.](#)

**23.10.404.7 International Building Code Section 404.7 amended – Emergency power.** International Building Code Section 404.7 is hereby amended to read as follows:

**[F] 404.7 EmergencyStandby power.** Equipment required to provide smoke control shall be provided with [emergencystandby](#) power in accordance with Section 909.11, [Section 2702](#), and [Table 2702](#).

**23.10.405.1 International Building Code Section 405.1 amended –General.** International Building Code Section 405.1 is hereby amended to read as follows:

**405.1 General.** The provisions of Sections 405.2 through 405.9 apply to building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the finished floor of the lowest *level of exit discharge*.

**Exceptions:**

1. One- and two-family *dwelling*s, sprinklered in accordance with Section 903.3.1.3.
2. Parking garages with *automatic sprinkler systems* in compliance with Section 405.3 [and pressurized stair enclosures provided with emergency power in compliance with Sections 909.20, 909.20.5, and 909.20.6 need not comply with Sections 405.2 through 405.9 but must comply with Section 405.4.3.1.](#)
3. Fixed guideway transit systems, [complying with NFPA 130 as amended by the City of Bellevue](#).
4. *Grandstands, bleachers*, stadiums, arenas and similar facilities.
5. Where the lowest *story* is the only *story* that would qualify the building as an underground building and has an area not exceeding 1,500 square feet (139 m<sup>2</sup>) and has an *occupant load* less than 10.

6. Pumping stations and other similar mechanical spaces intended only for limited periodic use by service or maintenance personnel.

**23.10.405.4.3 International Building Code Section 405.4.3 Amended – Elevators.** International Building Code Section 405.4.3 is hereby amended by the addition of a new subsection 405.4.3.1 to read as follows:

**[F] 405.4.3 Elevators.** Where elevators are provided, each compartment shall have direct access to an elevator. Where an elevator serves more than one compartment, an enclosed elevator lobby shall be provided and shall be separated from each compartment by a *smoke barrier* in accordance with Section 709. Doorways in the *smoke barrier* shall be protected by *fire door assemblies* that comply with Section 716, shall comply with the smoke and draft control assembly requirements of Section 716.2.2.1 with the UL 1784 test conducted without an artificial bottom seal, and shall be automatic-closing by smoke detection in accordance with Section 716.2.6.6.

**[F] 405.4.3.1 Fire service access elevator.** In buildings with an occupied floor more than 80 feet below the level of exit discharge, not fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3,500 pounds and shall comply with Section 3002.4.

**23.10.405.8 International Building Code Section 405.8 amended – Standby and emergency power.** International Building Code Section 405.8 is hereby amended to read as follows:

**[F] 405.8 Legally required Standby and emergency power.** A legally required standby power system complying with Section 2702 shall be provided for the legally required standby power loads specified in Table 2702Section 405.8.1. An emergency power system complying with Section 2702 shall be provided for the emergency power loads specified in Table 2702Section 405.8.2.

**[F] 405.8.1 Standby power loads.**

\_\_\_\_\_ The following are classified as standby power loads:

- ~~1. Smoke control system.~~
- ~~2. Ventilation and automatic fire detection equipment for smokeproof enclosures.~~
- ~~3. Elevators, as required in Section 3003.~~

**[F] 405.8.2 Emergency power loads.**

The following are classified as emergency power loads:

- ~~1. Emergency voice/alarm communications systems.~~
- ~~2. Fire alarm systems.~~
- ~~3. Automatic fire detection systems.~~
- ~~4. Elevator car lighting.~~
- ~~5. Means of egress and exit sign illumination as required by Chapter 10.~~
- ~~6. Fire pumps.~~

**23.10.503.1.4.1 International Building Code Section 503.1.4.1 amended – Enclosures over occupied roof areas.** International Building Code Section 503.1.4.1 is hereby amended to read as follows:

**503.1.4.1 Enclosures over occupied roof areas.** Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.

**Exceptions:**

- ~~1. Penthouses~~ constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5.
- ~~2. High-rise buildings.~~

**23.10.504.4.1 International Building Code Section 504.4.1 amended – Stair enclosure pressurization increase.** International Building Code Section 504.4.1 is hereby amended to read as follows:

**504.4.1 Stair enclosure pressurization increase.** For Group R-1, R-2, and I-1 Condition 2 assisted living facilities licensed under Chapter 388-78A WAC and residential treatment facilities as licensed by Washington State under Chapter 246-337 WAC located in buildings of Type VA construction equipped

**Commented [SG5]:** Aligning with National Electrical Code as adopted by WA Cities.



throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the maximum number of stories permitted in Section 504.4 may be increased by one provided the *interior exit stairways* and *ramps* are pressurized in accordance with Sections 909.6.3 and 909.20. Legally required standby power shall be provided in accordance with Sections 909.11 and 2702.2.16 for buildings constructed in compliance with this section, and [shall](#) be connected to stairway shaft pressurization equipment, elevators and lifts used for accessible means of egress (if provided), elevator hoistway pressurization equipment (if provided) and other life safety equipment as determined by the authority having jurisdiction. For the purposes of this section, [legally required](#) standby power shall comply with [the currently adopted edition of the Washington Cities Electrical Code 2020-NEC \(NFPA 70\)](#) Section 701.12. [Legally required standby power shall not be provided by the options listed below:](#)

- [Connection ahead of service disconnecting means](#)
- [Microgrid systems](#)

**23.10.706.1 International Building Code Section 706.1 amended – General**  
International Building Code Section 706.1 is hereby amended to read as follows:

**Section 706.1 General.** *Fire walls* shall be constructed in accordance with Sections 706.2 through 706.11. The extent and location of such *fire walls* shall provide a complete separation. Where a *fire wall* separates occupancies that are required to be separated by a *fire barrier* wall, the most restrictive requirements of each separation shall apply.

**Point of Information**

[When fire walls are provided, automatic sprinkler and fire alarm systems must be zoned to coincide with fire walls. Reference Sections 903.3.9 and 907.6.4.](#)

**Commented [SG6]:** Aligning with Firefighting operations.

....

**23.10.903.2.11 International Building Code Section 903.2.11 amended – .**

International Building Code Section 903.2.11 is hereby amended to add a new Section 903.2.11.8 to read as follows:

**[F] 903.2.11.8 Buildings exceeding 10,000 square feet.** *An automatic sprinkler system shall be installed throughout all newly constructed buildings where the total floor area exceeds 10,000 square feet including basements. An automatic sprinkler system shall also be installed throughout existing buildings when an addition is made to the building and the total floor area, including the basements, of the existing building and the addition combined exceeds 10,000 square feet, or when the value of a structural alteration or repair of an existing building 10,000 square feet in area or greater exceeds 50 percent of the assessed valuation of such existing building, or exceeds 50 percent of the recognized replacement cost of the structure, without consideration of depreciation, as determined under the Marshall Valuation Service Cost Handbook, whichever is greater. For purposes of this section, portions of buildings separated by one or more fire walls shall not be considered a separate building. To the extent this section conflicts with any other provision of the International Building Code or the International Fire Code adopted by the City, this section shall control.*

**23.10.903.3 International Building Code Section 903.3 amended – Installation requirements.** International Building Code Section 903.3 is hereby amended to read as follows:

**[F] 903.3 Installation requirements.** *Automatic sprinkler systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.98.*

....

**23.10.903.3 International Building Code Section 903.3 amended to add a new Section 903.3.9 – Fire sprinkler zones.** International Building Code Section 903.3 is hereby amended by the addition of a new section 903.3.9 to read as follows:

....

**903.3.9 Fire sprinkler zones.** When fire walls and/or horizontal exits are provided the sprinkler system shall be zoned to coincide with the fire walls and/or horizontal exits.

**Exception:** Sprinkler zoning is not required in existing construction if fire alarm initiating devices provide the same level of occupant notification that a zoned sprinkler system would provide.

**23.10.903.3.1 International Building Code Section 903.3.1 amended – Standards.** International Building Code Section 903.3.1 is hereby amended to read as follows:

**[F] 903.3.1 Standards.** Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1, ~~unless otherwise permitted by Sections 903.3.1.2 and 903.3.1.3 and other chapters of this code, as applicable.~~ 903.3.1.2 or 903.3.1.3 and other chapters of this code, as applicable. In addition, sprinkler systems shall be designed with a buffer to account for water system fluctuations to include a low reservoir condition. Such buffer shall be 5% for static pressures less than 50 psi and 10% for static pressures above 50 psi.

**Exception:** Buffers are not required for systems designed in accordance with Section 903.3.1.3 (NFPA 13 D)

Permit applicants shall independently verify site specific static pressure:

- Prior to initiating the sprinkler system.
- Prior to installing any sprinkler piping, including the underground supply.
- Prior to requesting any cover inspections.

....

**23.10.903.3.1.1 International Building Code Section 903.3.1.1 amended – NFPA 13 sprinkler systems.** International Building Code Section 903.3.1.1 is hereby amended to read as follows:

**[F] 903.3.1.1 NFPA 13 sprinkler systems.** Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Section 903.3.1.1.1, ~~and~~ 903.3.1.1.2, ~~and~~ [903.3.1.1.3](#).

**[F] 903.3.1.1.1 Exempt locations.** Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.

2. A room or space where sprinklers are considered undesirable because of the nature of the contents, where *approved* by the *fire code official*.

~~3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire resistance rating of not less than 2 hours.~~

~~34.~~ Rooms or areas that are of noncombustible construction with wholly noncombustible contents.

~~45.~~ Fire service access elevator machine rooms and machinery spaces.

~~56.~~ Machine rooms, machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008.

~~6. Elevator machine rooms, elevator machinery spaces, control spaces, or hoistways of traction elevators that comply with NFPA 13 Section 8.15.5.3.~~

**[F] 903.3.1.1.2 Bathrooms.** In Group R occupancies sprinklers shall not be required in bathrooms that do not exceed 55 square feet (5 m<sup>2</sup>) in area and are located within individual *dwelling units* or *sleeping units*, provided that walls and

ceilings, including the walls and ceilings behind a shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

[\[F\] 903.3.1.1.3 Seismic coefficient. The coefficient Cp for seismic bracing design calculations in accordance with NFPA 13 shall either use a value of 0.70 or shall use a value based on site specific USGS data.](#)

....

**23.10.903.3.1.2 International Building Code Section 903.3.1.2 amended – NFPA 13R sprinkler systems.** International Building Code Section 903.3.1.2 is hereby amended to read as follows:

**[F] 903.3.1.2 NFPA 13R sprinkler systems.** *Automatic sprinkler systems* in Group R occupancies up to and including four stories in height shall be permitted to be installed throughout in accordance with NFPA 13R.

A *building* designed in accordance with Washington Administrative Code 51-50-0504, 0510 or Section 510.4 of the *International Building Code* shall be sprinklered throughout in accordance with NFPA 13R. The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from the horizontal assembly creating separate buildings.

....

**23.10.903.4.3 International Building Code Section 903.4.3 amended – Floor control valves.** International Building Code Section 903.4.3 is hereby amended to read as follows:

**[F] 903.4.3 Floor control valves.** *Approved supervised indicating control valves* shall be provided at the point of connection to the riser on each floor ~~in high-rise buildings.~~ The floor control valves shall be located within interior exit stairways and within 6 feet of floors or landings unless chains or other approved devices are readily available.

Exception: In buildings without interior exit stairways, the location of the floor control valves shall be determined by the fire code official.

**23.10.903.5 International Building Code Section 903.5 amended – Testing and maintenance.** International Building Code Section 903.5 is hereby amended to read as follows:

**[F] 903.5 Testing and maintenance.** Sprinkler systems shall be tested and maintained in accordance with the International Fire Code Section 903.5.1.

**[F] 903.5.1 Fire sprinkler and standpipe main/express drains.**  
Fire sprinkler and standpipe main/express drains shall be positioned to drain to the sanitary sewer. Additionally, maintenance or testing discharges from fire pumps shall be treated in order to comply with the National Pollution Discharge Elimination System (NPDES) requirements.

**Point of Information**  
Water drained or otherwise discharged from a fire sprinkler system, standpipe or fire pump in the course of testing and maintenance is considered an “illicit discharge” and must drain to the sanitary sewer or be treated in order to discharge to storm drains, ditches, or water bodies.

**23.10.905.3 International Building Code Section 905.3 amended – Required installations.** International Building Code Section 905.3 is hereby amended to read as follows:

**[F] 905.3 Required installations.** Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.810. Standpipe systems are allowed to be combined with *automatic sprinkler systems*.

**Exception:** Standpipe systems are not required in Group R-3 occupancies.

....

**23.10.905.3.1 International Building Code Section 905.3.1 amended – Height.**  
International Building Code Section 905.3.1 is hereby amended to read as follows:

**[F] 905.3.1 Height.** Class ~~L~~**III**-standpipe systems shall be installed throughout buildings where any of the following conditions exist:

1. Four or more stories are above or below grade plane.
2. The floor level of the highest *story* is located more than 30 feet (9144 mm) above the lowest level of fire department access.
3. The floor level of the lowest *story* is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.

**Exceptions:**

- ~~1. Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~
- ~~2. Class I standpipes are allowed in Group B and E occupancies.~~
- ~~3. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access.~~
- ~~4. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.~~
- ~~5. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.~~
- ~~6. Class I standpipes are allowed in buildings where occupant-use hose lines will not be utilized by trained personnel or the fire department.~~
- ~~7. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:~~
  - ~~7.1. Recessed loading docks for four vehicles or less.~~
  - ~~7.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.~~

**23.10.905.3 International Building Code Section 905.3.9 added – High-rise building standpipes.** International Building Code Section 905.3 is hereby amended by the addition of a new subsection 905.3.9 to read as follows:

**[F] 905.3.9 High-rise building standpipes.** Standpipe risers shall be combination standpipe/sprinkler risers using a minimum pipe size of 6 inch. One 2-1/2 inch hose connection shall be provided on every intermediate floor level landing in every required stairway and elsewhere as required by NFPA 14. Where, and only where, static or residual water pressures at any hose outlet exceeds 175 psi (1207 kPa), approved pressure-regulating devices shall be installed to limit the pressure to a range between 125 and 175 psi at not less than 300 gpm. The pressure on the inlet side of the pressure-regulating device shall not exceed the rated working pressure of the device. An additional non-regulated hose connection located directly below the PRV or an equally sized bypass around the pressure regulating device with a normally closed control valve shall be provided at each reduced pressure connection.

Each non-regulated hose connection shall be labeled “**High Pressure – No PRV**”. The sign shall have 1/2-inch white letters on a red background.

**Point of Information**

Additional flow and pressure requirements are contained in NFPA 14. Designers should be cognizant of space considerations within stair shafts and additional signage needed for the PRV bypass control valves.

**23.10.905.3 International Building Code Section 905.3.10 added – Vertical standpipes served by fire pumps.** International Building Code Section 905.3 is hereby amended by the addition of new subsection 905.3.10 to read as follows:

...

**[F] 905.3.10 Vertical standpipes served by fire pumps in high-rise buildings.** Where vertical standpipes are served by fire pumps a check valve shall be installed at the base of vertical standpipe.

**23.10.905.4 International Building Code Section 905.4 amended – Location of Class I standpipe hose connections.** International Building Code Section 905.4 is hereby amended to read as follows:



**[F] 905.4 Location of Class I standpipe hose connections.** Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required *interior exit stairway*, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at [an intermediate landing between stories, the main floor landing](#) unless otherwise *approved* by the *fire code official*. [Where stairs are required to provide roof access, the standpipe roof connections shall be located adjacent to the stair opening on the roof.](#)

**Exception:** A single hose connection shall be permitted to be installed in the open corridor or open breezeway between open stairs that are not greater than 75 feet (22 860 mm) apart.

2. On each side of the wall adjacent to the *exit* opening of a *horizontal exit*.

**Exceptions:**

[1. Where floor areas adjacent to a \*horizontal exit\* are reachable from an \*interior exit stairway\* hose connection by a 30-foot \(9144 mm\) hose stream from a nozzle attached to 100 feet \(30 480 mm\) of hose, a hose connection shall not be required at the \*horizontal exit\*.](#)

[2. When the \*fire code official\* determines that a standpipe connection is not needed.](#)

3. In every *exit* passageway, at the entrance from the *exit* passageway to other areas of a building.

**Exception:** Where floor areas adjacent to an *exit* passageway are reachable from an *interior exit stairway* hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the entrance from the *exit* passageway to other areas of the building.

4. In covered [and open](#) mall buildings, adjacent to each exterior public entrance to the mall, ~~and~~ adjacent to each entrance from an exit passageway or exit corridor to the mall, [at each intermediate landing within required enclosed stairways, and at other locations as necessary so that the distance to reach all portions of a tenant space does not exceed 200 feet \(60 960 mm\) from a hose connection.](#)

~~open mall buildings, adjacent to each public entrance to the mall at the perimeter line and adjacent to each entrance from an exit passageway or exit corridor to the mall.~~

5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), at least one standpipe shall be provided with a 2-1/2 inch hose connection located on the roof. Additional hose connections shall be provided so that all portions of the roof are within 200 feet of hose travel distance from a standpipe hose connection. The hose connection(s) shall be at least 10 feet (3048 mm) from the roof edge, skylight, light well or other similar openings, unless protected by a 42-inch-high (1,067 mm) guardrail or equivalent. All roof hose connections shall be arranged to be operable without entering the building. Roof connections in high-rise buildings are allowed to be located at the highest landing of a stairway with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes~~a hose connection shall be located to serve the roof or at the highest landing of an interior exit stairway with access to the roof provided in accordance with Section 1011.12.~~

6. Where the most remote portion of a nonsprinklered floor or *story* is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or *story* is more than 200 feet (60 960 mm) from a hose connection, ~~the fire code official is authorized to require that additional hose connections be provided in approved locations~~additional hose connections shall be provided in interior exit stairways or protected locations that are accessed through protected enclosures. The protected enclosure shall be a corridor constructed as a smoke barrier from the exit enclosure to the standpipe connection.

**Exception:** Hose connections in parking garages must be located in vertical exit enclosures, protected locations, immediately adjacent to exterior exit doors, loading docks or other areas as approved by the fire code official. Subject to the approval of the fire code official, the travel distance may also be increased to a maximum distance of 240 feet.

**Point of Information**

Chapter 10 of this code outlines the requirements for stairways to the roof and roof access. This section (905.4) identifies the locations of standpipes and hose

[connections, but does not dictate the need for additional stairways to the roof or roof access.](#)

....

**23.10.905.8 International Building Code Section 905.8 amended – Dry standpipes.** International Building Code Section 905.8 is hereby amended to read as follows:

**[F] 905.8 Dry standpipes.** Dry standpipes shall not be installed.

**Exception:** Where subject to freezing and in accordance with NFPA 14 [when approved by the fire code official.](#)

**23.10.907.1 International Building Code Section 907.1 amended – General.** International Building Code Section 907.1 is hereby amended to read as follows:

**[F] 907.1 General.** This section covers the application, installation, performance and maintenance of fire alarm systems and their components [in new and existing buildings and structures in accordance with the items listed below.](#)

[1. The requirements of Section 907.2 are applicable to new buildings and structures, new fire alarm systems, and replacement of existing fire alarm control panels being installed in existing structures.](#)

[2. When an existing fire alarm unit is replaced in existing structures, the entire fire alarm system shall comply with the requirements of Section 907.2.](#)

**[Point of Information](#)**  
[See Public Information Sheet F-75](#)  
[“Fire Alarm Panel Replacement”](#)  
[for additional information.](#)

[Fire alarm system upgrades shall not require upgrades to other building systems, unless necessary to meet the requirements of Section 907.2. Pursuant to Section](#)

104.8 and subject to the approval of the *fire code official*, fire alarm system upgrades may be phased in over a time period not to exceed 5 years. Approval of a phased alarm system upgrade must be documented in an executed agreement between the applicant and the City of Bellevue, and shall contain measurable milestones, insurance requirements, and indemnity provisions.

3. The requirements of *International Fire Code Section 907.9* are applicable to existing buildings and structures in addition to the condition described in item 2.

4. For the purpose of this section, fire barriers shall not be considered to create a separate building.

5. Buildings required by this section to be provided with a fire alarm system shall be provided with a single fire alarm system unless otherwise approved by the *fire code official*.

....

**23.10.907.1.2 International Building Code Section 907.1.2 amended – Fire alarm shop drawings.** International Building Code Section 907.1.2 is hereby amended to read as follows:

**[F] 23.10.907.1.2 Fire alarm shop drawings.** Shop drawings for fire alarm systems shall be prepared in accordance with NFPA 72 and submitted for review and approval prior to system installation. In addition, the submittal documents shall include a narrative and input/output matrix that supports the approved exiting plan for the building.

**23.10.907.2.7.1 International Building Code Section 907.2.7.1 deleted – Occupant notification.** International Building Code Section 907.2.7.1 is hereby deleted.

**23.10.907.2.13.1.1 International Building Code Section 907.2.13.1.1 amended – Area smoke detection.** International Building Code Section 907.2.13.1.1 is hereby amended to read as follows:

**[F] 907.2.13.1.1 Area smoke detection.** Area smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section, [other than duct smoke detectors](#), shall activate the emergency voice/alarm communication system in accordance with Section 907.5.2.2. In addition to smoke detectors required by Sections 907.2.1 through 907.2.9, smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room that is not provided with sprinkler protection.
2. In each elevator machine room, machinery space, control room and control space and in elevator lobbies.

[3. Within 5 feet \(1524 mm\) of doors opening into stairways that are smokeproof enclosures or are pressurized stairways.](#)

[Where smoke detectors cannot be utilized due to ambient conditions, approved automatic heat detectors shall be installed in accordance with Section 907.4.3.](#)

**23.10.907.2.13.2 International Building Code Section 907.2.13.2 deleted – Fire department communication system.** International Building Code Section 907.2.13.2 is hereby deleted.

**23.10.907.2.18.1 International Building Code Section 907.2.18.1 amended – Smoke detectors.** International Building Code Section 907.2.18.1 is hereby amended to read as follows:

**[F] 907.2.18.1 Smoke detectors.** Not fewer than one smoke detector *listed* for the intended purpose shall be installed in all of the following areas:

1. ~~Mechanical equipment, electrical, transformer, telephone equipment, elevator machine or similar rooms~~Electrical, non-Utility-owned transformer vault rooms, telephone equipment, elevator machine, or similar rooms.

2. Elevator lobbies.

3. The main return and exhaust air plenum of each air-conditioning system serving more than one *story* and located in a serviceable area downstream of the last duct inlet.

4. Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a *listed* smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm (2.4 m<sup>3</sup>/s) and serving not more than 10 air-inlet openings.

5. Within 5 feet of doors opening into stairways that are smokeproof enclosures, or that are pressurized stairways. Where smoke detectors cannot be utilized due to ambient conditions, approved automatic heat detectors shall be installed in accordance with Section 907.4.3.

**23.10.907.5.2.1.1 International Building Code Section 907.5.2.1.1 amended – Average sound pressure.** International Building Code Section 907.5.2.1.1 is hereby amended to read as follows:

**[F] 907.5.2.1.1 Average sound pressure.** The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the *average ambient sound level* or 5 dBA above the maximum sound level having a duration of not less than 60 seconds, whichever is greater, in every *occupiable space* within the building, or in the case of a partial alarm system, throughout the space that is provided with the fire alarm system. The minimum sound pressure levels shall be: 75 dBA in occupancies in Groups R and I-1; 90 dBA in mechanical equipment rooms; and 60 dBA in other occupancies. In occupancies with high sound levels, such as nightclubs, bars, theaters, auditoriums, sanctuaries, etc., an interface shall be provided between the fire alarm system and the noise source to eliminate the noise source upon activation of the fire alarm system.

[Exception: Private mode signaling in accordance with NFPA 72 shall be allowed in areas of group I-2 and I-3 occupancies where occupants are not expected to self-evacuate.](#)

**23.10.907.5.2.2.5 International Building Code Section 907.5.2.2.5 amended – Standby power.** International Building Code Section 907.5.2.2 is hereby amended to read as follows:

**[F] 907.5.2.2.5 Legally required sStandby power.** Emergency voice/alarm communications systems shall be provided with legally required standby power in accordance with Section 2702.

**23.10.907.5.2.2.6 International Building Code Section 907.5.2.2.6 added – Phased evacuation.** International Building Code Section 907.5.2.2.6 is hereby added to read as follows:

**[F] 907.5.2.2.6 Phased evacuation.** All buildings more than 10 stories above the lowest level of fire department access shall utilize an approved phased evacuation plan.

**Exceptions:**

1. When an additional exit stairway meeting the requirements of Sections 1011 and 1023 are provided in addition to the minimum number of exits required by Section 1006.
2. Where the width of each required exit stairway as specified in Section 1011.2 is increased by not less than 24 inches of additional width.
3. Where occupant self-evacuation elevators in accordance with IBC Section 3008 have been installed.
4. Where full tenant evacuation can be demonstrated to be accomplished in less than 7 minutes.

**Point of Information**

These provisions are intended to facilitate the simultaneous building evacuation and firefighter response into the building.

**23.10.907.6.3.1 International Building Code Section 907.6.3.1 amended – Annunciator panel.** International Building Code Section 907.6.3.1 is hereby amended to read as follows:

**[F] 907.6.3.1 Annunciator panelAnnunciation.** ~~The initiating device status shall be announced at an approved on-site location~~All fire alarm systems in buildings without a fire command center shall be provided with an annunciator panel (or the main fire alarm control panel) located inside the building at the main addressed building entrance.

**Exception:** Other approved locations.

**23.10.909.10.2 International Building Code Section 909.10.2 amended – Ducts.** International Building Code Section 909.10.2 is hereby amended to read as follows:

**[F] 909.10.2 Ducts.** Duct materials and joints, including shafts acting as ducts, shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 909.10.1. Ducts shall be constructed and supported in accordance with the *International Mechanical Code*. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire-resistance-rated structural elements of the building by substantial, noncombustible supports.

**Exception:** Flexible connections for the purpose of vibration isolation, complying with the *International Mechanical Code* and that are constructed of *approved* fire-resistance-rated materials.



**23.10.909.10.3 International Building Code Section 909.10.3 amended – Equipment, inlets and outlets.** International Building Code Section 909.10.3 is hereby amended to read as follows:

**[F] 909.10.3 Equipment, inlets and outlets.** Equipment shall be located so as to not expose uninvolved portions of the building to an additional fire hazard. Outdoor air inlets shall be located so as to minimize the potential for introducing smoke or flame into the building. Exhaust outlets shall be so located as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard. In addition, supply air shall be taken directly from an outside, uncontaminated source located a minimum distance of 20 feet from any air exhaust system or outlet.

**23.10.909.11 International Building Code Section 909.11 amended – Emergency power.** International Building Code Section 909.11 is hereby amended to read as follows:

**[F] 909.11 EmergencyStandby power.** Smoke control systems, including energy management systems used for smoke control or smoke removal, shall be provided with emergencystandby power in accordance with Section 2702 and Table 2702.

**Exception:** In other than high-rise buildings, underground buildings, atriums, and covered mall buildings, smoke control systems shall be provided with legally required standby power in accordance with Section 2702 and Table 2702.

**909.11.1 Equipment room.** The standby power source and its transfer switches shall be in a room separate from the normal power transformers and switch gears and ventilated directly to and from the exterior. The room shall be enclosed with not less than 1-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

**[F] 909.11.12 Power sources and power surges.** Elements of the smoke control system relying on volatile memories or the like shall be supplied with uninterruptable power sources of sufficient duration to span 15-minute

primary power interruption. Elements of the smoke control system susceptible to power surges shall be suitably protected by conditioners, suppressors or other *approved* means.

**23.10.909.12 International Building Code Section 909.12 amended – Detection and control systems.** Section 909.12 of the International Building Code is hereby amended to read as follows:

**[F] 909.12 Detection and control systems.** Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and *listed* as smoke control equipment.

[Exception: Shaft pressurization equipment in buildings constructed in accordance with Washington Administrative Code 51-50-0504 or WAC 51-50-0510, or International Building Code Section 510.4 may utilize a fire detection system that is listed as releasing equipment.](#)

**[F] 909.12.1 Verification.** Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override and the presence of power downstream of all disconnects. A preprogrammed weekly test sequence shall report abnormal conditions audibly, visually, by printed report [or other approved means](#). The preprogrammed weekly test shall operate all devices, equipment and components used for smoke control.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with, and produce unwanted effects to, normal building operation, such individual components are permitted to be bypassed from the preprogrammed weekly testing, where *approved* by the [buildingfire code official](#) and in accordance with both of the following:

1. Where the operation of components is bypassed from the preprogrammed weekly test, presence of power downstream of all disconnects shall be verified weekly by a listed control unit.
2. Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6 of the *International Fire Code*.

....

**23.10.909.18.8.3 International Building Code Section 909.18.8.3 amended – Reports.** International Building Code Section 909.18.8.3 is hereby amended to add the following subsection 909.18.8.3.2 to read as follows:

....

**[F] 909.18.8.3.2 Certificate of compliance.** A certificate of compliance shall be provided by the special inspector and responsible registered design professional certifying that the referenced property is in substantial compliance. The certificate shall identify the company, designer, special inspector that performed the testing, and shall identify the name, date and address of the property being tested. The following statement must also be included in the certificate: "I have reviewed the report and by personal knowledge and on-site observation certify that the smoke control system is in substantial compliance with the approved design documents, and to the best of my understanding complies with requirements of the applicable codes as identified in the smoke control report."

**23.10.909.20 International Building Code Section 909.20 amended – Smokeproof enclosures.** International Building Code Section 909.20 is hereby amended to read as follows:

**909.20 Smokeproof enclosures.** Where required by Section 1023.11, a smokeproof enclosure shall be constructed in accordance with this section. All portions of the smokeproof enclosure ventilation system and equipment must comply with the provisions of Section 909. A smokeproof enclosure shall consist of an interior exit stairway or ramp that is enclosed in accordance with the applicable provisions of Section 1023 and an open exterior balcony, ventilated vestibule or pressurized entrance vestibule meeting the requirements of this section. Where access to the roof is required by the *International Fire Code*, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.

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**23.10.909.20.7.2 International Building Code Section 909.20.7.2 amended – Emergency power.** International Building Code Section 909.20.7.2 is hereby amended to read as follows:

**909.20.7.2 EmergencyStandby power.** Mechanical vestibule and *stairway* and *ramp* shaft ventilation systems and automatic fire detection systems shall be provided with emergencystandby power in accordance with Section 2702 and Table 2702.

Exception: Legally required standby power systems shall be provided for pressurization systems in low-rise buildings when designed in accordance with Washington State Building Code Section 504.4.1.

**23.10.909.20.7.3 International Building Code Section 909.20.7.3 amended – Acceptance and testing.** International Building Code Section 909.20.7.3 is hereby amended to read as follows:

**909.20.7.3 Acceptance and testing.** Before the mechanical equipment is approved, the system shall be tested in the presence of the building official to confirm that the system is operating in compliance with these requirements. Special inspection for performance shall be required in accordance with Section 909.18.8.

**23.10.911.1.2 International Building Code Section 911.1.2 – Separation and penetrations.** International Building Code Section 911.1.2 is hereby amended to read as follows:

**[F] 911.1.2 Separation and penetrations.** The *fire command center* shall be separated from the remainder of the building by not less than a 2-hour *fire barrier* constructed in accordance with Section 707 or *horizontal assembly* constructed in accordance with section 711, or both. Penetrations into and openings through a fire command center are prohibited except for required exit doors; equipment and ductwork necessary for heating, cooling or ventilation; sprinkler branch line piping; electrical raceway for fire department communication and control; and electrical raceway serving the fire command center or being controlled from the fire command center. Such penetrations shall be protected in accordance with Section 714.

Exception: Metallic piping, with no joints or openings within the fire command center, is allowed if penetrations are protected in accordance with Section 714.

**23.10.912.5 International Building Code Section 912.5 amended – Signs.**  
International Building Code Section 912.5 is hereby amended to read as follows:

**[F] 912.5 Signs.** A metal sign with raised letters not less than 1 inch (25 mm) in size shall be mounted on all fire department connections serving automatic sprinklers, standpipes or fire pump connections. Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES SPRINKLERS, STANDPIPES, COMBINED, DRY S/PIPES, DRY S/P & SPKRS, BOOST TO (as specified by the fire code official) PSI, or TEST CONNECTION or a combination thereof as applicable. Where the fire department connection does not serve the entire building, a sign shall be provided indicating the portions of the building served. Systems utilizing Pressure Reducing Valves (PRV's) must note the required boosted pressure at the Fire Department Connection in order to overcome the PRV setting. If it is not readily apparent which building or portion the fire department connection serves, the sign shall also include the premises address or building identification, and the portion of the building protected.

Exception: A metal sign with letters at least 1 inch (25 mm) in height may match the fire department connection where chrome, brass, or other approved decorative finish is utilized.

**912.5.1 Markings.** The fire department connection stand-alone pipe shall be painted red for greater visibility.

Exception: Fire department connections such as chrome, brass, or other approved decorative finish.

**Point of Information**

Systems utilizing Pressure Reducing Valves (PRV's) must note the required boosted pressure at the Fire Department Connection, in order to overcome the PRV setting.

**23.10.913.1 International Building Code Section 913.1 amended – General**  
Section 913.1 of the International Building Code is hereby amended to read as follows:

**[F] 913.1 General.** Where provided, fire pumps for fire protection systems shall be installed in accordance with this section and NFPA 20.

**Exception:** Pumps for automatic sprinkler systems installed in accordance with Section 903.3.1.3, or Section P2904 of the *International Residential Code*.

[913.1.1 Fire Pump Controls. Fire pump controllers supplying standpipes in excess of 130 psi shall be soft start.](#)

**23.10.913.2 International Building Code Section 913.2 amended – Protection against interruption of service.** International Building Code Section 913.2 is hereby amended to read as follows:

**[F] 913.2 Protection against interruption of service.** The fire pump, driver and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

**[F] 913.2.1 Protection of fire pump rooms and access.** [In high-rise buildings, fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both. In other than high-rise buildings, separation shall consist of 1-hour fire barriers constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both.](#)

Fire pump rooms not directly accessible from the outside shall be accessible through an enclosed passageway from an *interior exit stairway* or exterior exit. The enclosed passageway shall have a *fire-resistance rating* not less than the *fire-resistance rating* of the fire pump room.

**Exceptions:** [Where a fire pump is installed in a parking garage separated from the rest of the building by fire-rated construction](#)

equivalent to the pump room, and the portion of the building containing the fire pump is protected by a sprinkler system that does not rely on the fire pump, the protected access to the pump room shall not be required.

Rooms containing fire pumps shall be free from storage, equipment, and penetrations not essential to the operation of the pump and related components.

**Exception:** Equipment related to domestic water distribution shall be permitted to be located within the same room as the fire pump equipment.

**Point of Information**

These provisions originate in NFPA 20 (2019) and are intended to facilitate fire department access to the fire pump room. Ideally fire pump rooms are located on the perimeter of the building affording direct access. Where that is not possible, a protected passageway is required. This passageway is not synonymous with an *exit passageway* and therefore not subject to the significant limitations of allowable penetrations. Fire pump rooms are not permitted to open directly into an *exit passageway* or *interior exit stairway*, rather the fire pump room must open into a vestibule before access to an *exit passageway* or an *interior exit stairway*.

....

**23.10.919 International Building Code Section 919 Added – Firefighter air systems.** International Building Code Chapter 9 is hereby amended to add a new section 919 to read as follows:

....

**SECTION 919**  
**FIREFIGHTER AIR REPLENISHMENT SYSTEMS**

**Commented [SG7]:** Modifies the Firefighter Air Replenishment System requirement to align with the Int'l Fire Code and Fire Department Operational needs. These proposed amendments are estimated to be essentially cost neutral when compared to the existing requirements.

**[F] 919.1 Scope.** The design, installation, and maintenance of firefighter air systems shall be in accordance with this section.

**[F] 919.2 Required installations.** Firefighter air replenishment systems shall be installed in the following buildings and structures:

1. Buildings classified as high-rise in accordance with the International Building Code.
2. Transportation tunnels constructed in accordance with NFPA 130 or NFPA 502 that exceed 300 feet in length.
3. Underground pedestrian tunnels that exceed 300 feet in length.

**[F] 919.3 Certificate of compliance**

1. No certificate of occupancy shall be issued for a high-rise building or underground transportation and pedestrian tunnel unless a certificate of compliance, as described in Section 919.15.3.2, is first issued.
2. The following elements for the life safety system shall be installed in accordance with *approved* plans and specifications and shall be tested, certified and proved to be in proper working condition to the satisfaction of the *fire code official* before issuance of the certificate of compliance.

**[F] 919.4 Firefighter air replenishment system.** The firefighter air replenishment system is a complete, self-contained breathing air replenishment system, permanently installed within a structure, consisting of external mobile air connection panels, interior air fill stations, interconnected piping distribution system and an air storage system. All final locations shall be approved by the *fire code official*.

**[F] 919.4.1 Purpose.** The firefighter air replenishment system allows firefighters and other first responders to replenish empty breathing air cylinders within close proximity of the incident, reducing the amount of travel distance, time and personnel needed for logistical support, to maximize firefighter safety and effectiveness.

**[F] 919.4.2 Scope.** The design, installation, testing and certification of the firefighter air replenishment system shall be in accordance with this section.

**[F] 919.4.3 Safety.** The firefighter air replenishment system is a life-safety system. The system shall provide a safe and reliable source of



clean breathable air to firefighters and other first responders performing fire suppression, evacuation, search and rescue, and other types of emergency response tasks at incidents requiring the use of self-contained breathing apparatus. Nothing within this specification shall be reduced in quality in any manner, including but not limited to system design criteria, system performance criteria, components, materials, installation procedures, testing procedures, commissioning requirements and certification.

**[F] 919.4.4 Quality assurance.** Plans, specifications, equipment, product data sheets, and system calculations for the firefighter air replenishment system shall be prepared, reviewed and stamped by a Washington State licensed engineer knowledgeable and qualified in high pressure breathing air replenishment systems, who can demonstrate prior experience with such systems.

**[F] 919.4.5 Contractor qualifications.** The firefighter air replenishment system shall be installed by a licensed Washington State contractor with a minimum 3 years of experience specializing in fire department high pressure breathing air field. The installation contractor shall have a Bellevue business license.

#### **[F] 919.5 Performance and design criteria.**

**[F] 919.5.1 Safety factor.** The firefighter air replenishment system shall allow firefighters to replenish a minimum of two 66 cubic foot breathing air cylinders at 5,500 PSIG simultaneously within two minutes or less. All components of the system shall be rated to operate at a minimum working pressure of 5,500 PSIG at 70°F with a minimum 4:1 safety factor.

**[F] 919.5.2 Replenishment criteria.** The air storage system shall be capable of replenishing not less than 50 breathing air cylinders at a rate of 2 simultaneously, each pair within 2 minutes or less (25 repetitions) without fire department supplementation, based on fire department standard breathing air cylinders of 66 cubic feet at 5,500 PSIG.

**[F] 919.5.3 Design flow.** The interconnected piping distribution system shall have a minimum calculated design flow using one (1) interior fill station and panel, totaling four 66 cubic foot 5,500 PSIG breathing air cylinders operating simultaneously at the farthest point from the fire department access.

**[F] 919.5.4 Fire department augmentation.** When air supplementation becomes available by the fire department mobile air unit, the external mobile air connection panel shall allow the mobile air unit operator to connect and begin augmentation of the system, providing for a constant source of breathing air replenishment to all interior fill stations and panels.

**[F] 919.5.5 Air storage system isolation.** The interconnected piping distribution system shall be designed so that the external mobile air connection panel may be isolated from the air storage system and routed directly to the interior air fill stations and panels via the system main distribution line. This shall be accomplished through the means of check valves and actuator selector valves readily accessible by fire department personnel, to allow breathing air to be supplied directly from the fire department mobile air unit to the interior fill stations and panels.

**[F] 919.6 Permits, plans and fees.**

**[F] 919.6.1 Permits.** A permit is required to install and repair a firefighter air replenishment system.

**[F] 919.6.2 Plans.** Prior to the installation of a firefighter air replenishment system, plans, calculations and specifications shall be submitted to the *fire code official* for review and approval in accordance with City of Bellevue permit submittal requirements. Plans and calculations shall be stamped by a Washington State licensed engineer and shall demonstrate compliance with the requirements of this section and demonstrate that the design criteria for all pressure containing components is satisfied with a minimum working pressure of 5,500 PSIG at 70°F with a minimum 4:1 safety factor.

**[F] 919.6.2.1 Mill reports.** The plans submittal shall also include manufacturer mill report for the tubing, fittings, valves, pressure regulators, pressure relief devices, pressure gauges, cylinder filling hoses and all other components that may be required for a complete firefighter air replenishment system installation.

**[F] 919.6.2.2 Additional information.** The *fire code official* is authorized to require additional information that is necessary for ensuring the proposed design meets the requirements of this section.

**[F] 919.6.2.3 Approval required.** The installation of the firefighter air replenishment system shall not commence until complete plans, specifications and calculations have been submitted and *approved*, and a permit has been issued by the *fire code official*.

**[F] 919.6.3 Fees.** Fees shall be submitted to the *fire code official* at the time of plan submittal.

**[F] 919.6.4 Codes and standards.** The firefighter air replenishment system shall conform to all current national standards and this Section 919. Construction requirements shall follow the currently adopted editions of the IBC and IFC. Where applicable, all components of the firefighter air replenishment system shall meet the minimum requirements of the NFPA, OSHA, ASTM, ASME, ANSI and Bellevue Building, Fire, Plumbing and Mechanical codes.

**[F] 919.7 System components.** All pressurized breathing air components of the firefighter air replenishment system shall be listed and *approved* by a nationally recognized testing laboratory or agency. The system shall contain, at a minimum, the following components.

1. External mobile air connection panel;
2. Air storage system;
3. Air monitoring system;
4. Interior air fill station;
5. Interior air fill panel;
6. Interconnected piping distribution system; and
7. Associated wiring.

**[F] 919.7.1 Protection.** All components of the firefighter air replenishment system shall be protected from physical damage and the piping, storage equipment, monitoring wiring and power wiring shall be separated from the remainder of the building by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or 2-hour *horizontal assemblies* constructed in accordance with Section 711, or both.

**Exception:** Piping, monitor wiring and power wiring located outside of a 2-hour *fire barrier* construction shall be protected using any one of the following methods:

1. Cables listed in accordance with UL 2196 having a *fire-resistance rating* of not less than 2 hours; or
2. Piping or cables encased with not less than 2 inches (51 mm) of concrete; or
3. Electrical circuit protective systems having a *fire-resistance rating* of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

**[F] 919.7.2 Electrical power.** The following features serving the firefighter air replenishment system shall be supplied by both primary power and *legally required standby power*:

1. Air monitoring system – Section 919.14;
2. Air storage system – Section 919.12.3; and
3. External mobile air connection panel – Section 919.8.6

**[F] 919.7.3 Materials of construction.** All breathing air components used in the construction of the firefighter air replenishment system shall be *listed* by a nationally recognized testing laboratory or agency and *approved* by the *fire code official*. All pressurized components shall be compatible for use with high pressure breathing air equipment and self-contained breathing air apparatus. All pressurized breathing air components shall be rated for a minimum working pressure of 5,500 PSIG at 70°F with a minimum 4:1 safety factor.

**[F] 919.7.4 Markings.** All components of the firefighter air replenishment system shall be clearly identified by means of stainless steel or plastic labels or tags indicating their function. This shall include as a minimum all fire department connection panels, air fill stations, air storage system, piping, gauges, valves, air connections, air outlets, enclosures, and doors.

**[F] 919.8 External mobile air connection and enclosure.**

**[F] 919.8.1 Location.** A minimum of two external mobile air connection panels shall be attached to the building or on a remote monument at the exterior of the building and shall be interconnected to the air monitoring system, air storage system, air fill stations and air fill panels. The external mobile air connection panels shall be secured inside of a weather resistant NEMA 4 enclosure. The panels shall be within 50 feet of an approved roadway or driveway, or other location approved by the fire code official. The enclosures shall be visible and accessible on approach to the building and shall be maintained with a minimum of 6 feet clear distance that provides a 180-degree clear unobstructed access to the front of the panels.

**EXCEPTION:** When the fire code official determines that it is impractical to provide two panels, only one external mobile air connection panel will be required.

**[F] 919.8.2 Purpose.** The external mobile air connection panel shall provide the fire department mobile air operator access to the firefighter air replenishment system and shall be compatible with the fire department mobile air unit.

**[F] 919.8.3 Non-metallic materials.** When the enclosures are constructed of non-metallic materials, the enclosures shall be resistant to ultraviolet and infrared solar radiation.

**[F] 919.8.4 Vehicle protection.** When the panels are located in an area subject to vehicle traffic, impact protection shall be provided in accordance with *International Fire Code* Section 312.

**[F] 919.8.5 Enclosure marking.** The front of the enclosures shall be marked FIREFIGHTER AIR REPLENISHMENT SYSTEM on a securely attached stainless steel engraved, plastic engraved, or painted plate. The lettering shall be in a color that contrasts with the enclosure front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the enclosures shall be immediately visible and accessible to emergency response personnel.

**[F] 919.8.6 Enclosure components.** The external mobile air connection panel shall contain all of the necessary gauges, isolation valves, pressure relief valves, pressure regulating valves, check valves, tubing, fittings, supports, connectors, adapters, air monitoring displays, tamper devices, storage bypass and other necessary components as may be required to allow the fire department mobile air unit to connect and augment the system with a constant source of breathing air.

**[F] 919.8.7 Fire department key box.** A fire department key box shall be provided adjacent to the external mobile air connection panel and enclosure. A key for the enclosure shall be provided in the key box.

**Exception:** Subject to the approval of the *fire code official*, the key may be located in a fire department key box that also provides access keys for entry into the building, when it is nearby, the key is clearly marked, and there is sufficient room in the fire department key box.

**[F] 919.9 Interior air fill station and air fill panel.**

**[F] 919.9.1 Location.** Air fill stations shall be installed within buildings and structures as follows:

**[F] 919.9.2 Above grade structure.** An air fill station and enclosure shall be installed on the fifth floor above grade and every third floor thereafter. The air fill station shall be located at an *approved* location between the fire service access elevator and an *approved* enclosed interior exit stairway. Features of the approved stairway shall include access to all above grade floor levels of the building and proximity to the fire service access elevator. The specific location on the floors shall be *approved* by the *fire code official*. The location of air fill stations in buildings not equipped with fire service access elevators shall be *approved* by the *fire code official*.

**[F] 919.9.3 Underground structure.** An interior air fill panel shall be located in all required interior exit stairways on the floor landing commencing at the second level below grade and every other level below grade thereafter. The panel shall be located a minimum of 36 inches, but not more than 60 inches above finished floor or stair landing.

**[F] 919.9.4 Transportation and pedestrian tunnels.** An interior air fill panel shall be located within 200 feet of the tunnel entrance and at intervals not exceeding 400 feet thereafter as approved by the *fire code official*. The panel shall be located a minimum of 36 inches, but not more than 60 inches above finished floor or stair landing.

**[F] 919.9.5 Purpose.** Air fill stations shall provide firefighters and other first responders the ability to safely and reliably replenish empty breathing air cylinders.

**[F] 919.9.6 Performance.** Air fill stations shall be capable of replenishing a minimum of two 66 cubic foot, 5,500 PSIG breathing air

cylinders at 25 percent capacity within two minutes or less and shall provide for the refilling of breathing air cylinders within a certified rupture-proof fill containment enclosure. The design of the air fill station shall provide for the direct refilling of firefighter breathing air cylinders by means of a discharge outlet with a minimum of one cylinder filling hose that shall have a female quick connect (UAC). The female UAC shall be designed to connect to a male UAC. The assembled UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, *Standard on Open Circuit Self-Contained Apparatus for Fire and Emergency Services*.

**[F] 919.9.7 Enclosure requirements.** Each air fill station shall be installed within a lockable enclosure (closet or room) by a means approved by the fire code official. Each enclosure shall be located between the fire service access elevator and an approved enclosed interior exit stairway. Features of the approved stairway shall include access to all above-grade floor levels of the building and proximity to the fire service access elevator.

The door to each enclosure shall be readily visible from the entrance to the interior exit stairway and readily accessible at all times by firefighters and other emergency responders and shall be maintained with a minimum of six (6) feet clear distance for a 180-degree clear unobstructed access to the front of the air fill station. The enclosure shall have emergency illumination and at least one 120-volt AC duplex grounded receptacle supplied from the building emergency power system.

**[F] 919.9.8 Security.** To prevent unauthorized access to or tampering with the system, each air fill station enclosure shall be maintained locked by a means approved by the fire code official.

#### **[F] 919.10 Markings.**

**[F] 919.10.1 Enclosure.** Each air fill station enclosure shall be marked FIREFIGHTER AIR REPLENISHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the cabinet shall be immediately visible and accessible to emergency response personnel.

**[F] 919.10.2 Stairway.** Immediately above stairway signage required by International Fire Code Section 1023.9, a sign as described in

919.10.1 shall be posted at every door on floors equipped with air fill stations.

**[F] 919.10.3 Air fill station marking.** The front of each air fill station shall be marked FIREFIGHTER AIR REPLENISHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the cabinet shall be immediately visible and accessible to emergency response personnel.

**[F] 919.11 Air fill station components.** The air fill station shall contain all of the necessary gauges, isolation valves, pressure relief valves, pressure regulating valves, check valves, tubing, fittings, supports, connectors, adapters and other necessary components as may be required to allow firefighters and other first responders to safely and reliably replenish a minimum of two breathing air cylinders within a certified rupture-proof fill containment enclosure and an emergency connect directly to firefighter self-contained breathing apparatus equipment by means of quick fill adapters, hose and UAC fittings.

**[F] 919.11.1 Purpose.** Air fill panels shall provide firefighters and other first responders the ability to safely and reliably replenish empty breathing air cylinders during an emergency incident.

**[F] 919.11.2 Performance.** Air fill panels shall be capable of replenishing a minimum of two 66 cubic foot, 5,500 PSIG breathing air cylinders at 25 percent capacity within two minutes or less and shall provide for the direct refilling of firefighter breathing air cylinders by means of a discharge outlet with a minimum of two cylinder filling hoses that shall have a female quick connect (UAC). The female UAC shall be designed to connect to a male UAC. The assembled UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, *Standard on Open Circuit Self-Contained Apparatus for Fire and Emergency Services*.

**[F] 919.11.3 Enclosure requirements.** Each air fill panel shall be in a cabinet constructed of minimum 18-gauge carbon steel. The depth of the cabinet shall not create an exit obstruction when installed in building stairways. All components, except the control valve, pressure gauges, fill hoses and ancillary components, shall be contained behind a minimum 18-gauge carbon steel interior panel.

**[F] 919.11.4 Cylinder filling hose.** The design of the cabinet shall provide a means for storing the hose to prevent kinking. The brackets



shall be installed so that the hose bend radius is maintained at 4 inches (102 mm) or greater when the hose is coiled. The discharge outlet of each cylinder filling hose shall have a female Rapid Intervention Crew Universal Air Coupling (RIC/UAC). The female fitting shall be designed to connect to a male RIC/UAC. The assembled RIC/UAC shall meet the construction, performance and dimensional requirements of NFPA 1981, *Standard on Open Breathing Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services.*

**[F] 919.11.5 Door.** Hinges for the cabinet door shall be located inside of the cabinet. The door shall be arranged such that when the door is open, it does not reduce the required exit width or create an obstruction in the path of egress. A minimum of 20 percent of the door surface area shall be a relite constructed of tempered glass. The thickness of the glass shall not be greater than 1/8 inch.

**[F] 919.11.6 Security.** To prevent unauthorized access to or tampering with the system, each air fill panel enclosure shall be maintained locked by a means *approved by the fire code official.*

**[F] 919.11.7 Cabinet marking.** The front of each panel shall be marked FIREFIGHTER AIR REPLENISHMENT SYSTEM on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the cabinet shall be immediately visible and accessible to emergency response personnel.

**[F] 919.11.8 Air fill panel components.** The air fill panel shall contain all of the necessary gauges, isolation valves, pressure relief valves, pressure regulating valves, check valves, tubing, fittings, supports, connectors, adapters and other necessary components as may be required to allow firefighters and other first responders to safely and reliably replenish a minimum of 2 breathing air cylinders connecting directly to firefighter self-contained breathing apparatus equipment by means of quick fill adapters, hose and RIC/UAC fittings.

**[F] 919.12 Air storage system.**

**[F] 919.12.1 Location.** An air storage system shall be installed in buildings and structures at locations approved by the *fire code official.*

**[F] 919.12.2 Purpose.** The air storage system along with interior air fill stations and air fill panels shall provide firefighters and other first responders the ability to safely and reliably replenish empty breathing

air cylinders prior to the fire department mobile air unit arriving on scene.

**[F] 919.12.3 Performance.** The air storage system shall be capable of replenishing not less than 50 breathing air cylinders at a rate of 2 simultaneously, each pair within 2 minutes or less (25 repetitions) without fire department supplementation. The breathing air cylinders are fire department standard 66 cubic feet at 5,500 PSIG.

**[F] 919.12.4 Enclosure requirements.** The air storage system shall be contained within an enclosure (closet or room) which shall be separated from the remainder of the building by not less than 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both. The enclosure shall be sufficiently sized to accommodate all air storage system components. The access door to the enclosure shall be of sufficient size to allow for the maintenance and removal of the air storage system. The enclosure shall be conditioned so that the temperature is no less than 40°F or more than 80°F and shall have an engineered pressure relief vent for over-pressurization in the event of component failure. The enclosure shall have emergency illumination and at least one 120-volt AC duplex grounded receptacle supplied from the building *emergency power system*.

**[F] 919.12.5 Security.** To prevent unauthorized access to or tampering with the air storage system, the enclosure shall be maintained locked by a means *approved by the fire code official*.

**[F] 919.12.6 Enclosure marking.** The air storage enclosure shall be marked **FIREFIGHTER AIR REPLENISHMENT SYSTEM** on a securely fastened stainless steel engraved, plastic engraved or painted plate. The lettering shall be in a color that contrasts with the cabinet front and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke. The marking of the enclosure shall be immediately visible and accessible to emergency response personnel.

**[F] 919.12.7 Air storage system marking.** The air storage system shall be marked **FIREFIGHTER AIR REPLENISHMENT SYSTEM** on securely fastened stainless steel engraved, plastic engraved or painted plates. The lettering shall be in a color that contrasts with the system components and in letters that are a minimum of 2-inches high with 3/8-inch brush stroke.

**[F] 919.13 Piping, distribution materials and methods.**

**[F] 919.13.1 Prohibition.** The use of carbon steel, iron pipe, malleable iron, high-strength gray iron, alloy steel, copper or plastic for pressurized breathing air components is prohibited.

**[F] 919.13.2 Materials of construction.** All components of the piping distribution system shall be protected from physical damage and shall be separated from the remainder of the building by not less than 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both. All pressurized materials used in the construction of the piping distribution system shall be compatible for use with high pressure breathing air equipment and self-contained breathing apparatus. All pressurized breathing air components shall be rated for a minimum working pressure of 5,500 PSIG at 70°F with a minimum 4:1 safety factor. The internal surfaces of all pressurized material shall be free of contamination.

**[F] 919.13.3 Tubing.** Tubing shall be constructed of stainless-steel materials that are compatible with high pressure breathing air. When stainless steel tubing is used, it shall meet ASTM A-269, Grade 316 or an equal standard. Stainless steel tubing shall be a minimum .375 outside diameter x .065 wall 316 fully annealed seamless. Stainless steel tubing shall be at least Grade 316 and meet the requirements of ASTM A-479 or equal. Routing of tubing and bends shall be such as to protect the tubing from mechanical damage.

**[F] 919.13.4 Securement.** Tubing shall be supported at a maximum of five-foot intervals. Individual tubing clamps and mounting components shall be mechanically secured to the building structural support members in accordance with the manufacturer's specifications and the applicable Bellevue Plumbing and Mechanical codes.

**[F] 919.13.5 Marking.** All tubing shall be clearly marked FIREFIGHTER AIR REPLENISHMENT SYSTEM and HIGH-PRESSURE BREATHING AIR using double-sided engraved 3-inch x 1-inch stainless steel or plastic markers placed at a minimum of 10-foot intervals and at each floor level whether concealed or not.

**[F] 919.13.6 Fittings.** Fittings shall be constructed of stainless-steel materials that are compatible with high-pressure breathing air. Stainless steel fittings shall be at least Grade 316 and meet the requirements of ASTM A-479 or an equal standard and rated to the maximum working pressure of the tubing used.

**[F] 919.13.7 System assembly requirements.** The piping distribution system shall be a welded system, except where the tubing joints are readily accessible and at the point of connection to the individual air fill stations. Welding procedures shall follow nationally recognized standards. Prior to and during the welding of sections of tubing, a continuous, regulated argon purge at 3 PSIG shall be maintained to eliminate contamination with products of the oxidation or welding flux. The purge shall commence a minimum of 2 minutes prior to welding operations and continue until the welded joint is at ambient temperature of 72°F. When mechanical high-pressure tube fittings are used, they shall be listed for the type of materials to be joined and rated for the maximum pressure of the system. When mechanical tube fittings are used, prior approval by the *fire code official* must be obtained. All concealed mechanical fittings for tubing and valves shall be made accessible by means of a 90-minute *fire-resistance-rated, self-closing, fire door* with a fire department *approved* locking system. All concealed mechanical fittings for tubing and valves shall be readily accessible by means of a 90-minute *fire-resistance-rated, self-closing, self-latching fire door*. Each *fire door* shall be provided with a fire department *approved* locking system. Where tubing passes through *fire-resistance-rated* construction, it shall be protected by a sleeve at least three times the tube diameter. Penetrations of *fire-resistance-rated* assemblies shall comply with *International Building Code* Section 714.

**[F] 919.13.8 Prevention of contamination.** The installing contractor shall ensure that, at all times, the system components are not exposed to contaminants, including but not limited to, oils, solvents, dirt and construction materials. When known or suspected contamination of system components has occurred, the affected component shall not be installed in the system. The installation shall also conform to engineering standard of care.

**[F] 919.14 Air monitoring system.** An *approved* air monitoring system shall be provided. The system shall automatically monitor air quality, moisture and pressure on a continual basis. The air monitoring system shall be equipped with not less than two content analyzers capable of detecting carbon monoxide, carbon dioxide, nitrogen, oxygen, moisture and hydrocarbons. The air monitoring system shall be connected to the building fire alarm system as a supervisory alarm. The air monitoring system shall transmit a supervisory signal when any of the following levels are detected:

1. Carbon monoxide exceeds 5 ppm;

2. Carbon dioxide exceeds 1,000 ppm;
3. An oxygen level below 19.5 percent or above 23.5 percent;
4. A nitrogen level below 75 percent or above 81 percent;
5. Hydrocarbon (condensed) content exceeds 5 milligrams per cubic meter of air;
6. The moisture concentration exceeds 24 ppm by volume; or
7. The pressure falls below 4,950 PSIG at 70°F

The air quality and pressure status shall be displayed at the fire command center, within the exterior mobile air connection panel and at the air storage system. The building owner or authorized agent shall notify the fire department and testing contractor of any alarm signaling a rise in moisture or carbon monoxide levels within the system.

**[F] 919.15 Final testing, inspection and commissioning.**

**[F] 919.15.1** All components of the firefighter air replenishment system shall be pre-inspected and tested for proper assembly and operation prior to a functional fire department test and inspection.

**[F] 919.15.2 Testing procedures.**

**[F] 919.15.2.1 Pneumatic testing.** Following fabrication, assembly, and installation of the piping distribution system, exterior connection panel and interior cylinder fill panels, the *fire code official* shall witness the pneumatic testing of the complete system at a minimum test pressure of 6,050 PSIG using oil-free dry air, nitrogen or argon. A minimum 24-hour pneumatic test shall be performed. During this test all fittings, joints and system components shall be inspected for leaks. A solution compatible with the system component materials shall be used on each joint and fitting to detect any leaks. Any system defects or detected leaks shall be documented on an inspection report and either repaired or replaced.

As an alternate, a pressure decay test in accordance with ASME B31.3 is allowed. A test of the low-pressure monitoring switch shall be performed. Each air fill panel shall be tested for compatibility with the fire department self-contained breathing apparatus (SCBA) RIC/UAC. The pipe or tubing manufacturer mill report shall be provided to the *fire code official*.

**[F] 919.15.2.2 Low pressure monitor calibration.** Upon the successful completion of the twenty-four-hour pressure test, the system low pressure monitor shall be calibrated to not less than 4,950

PSIG descending and tested to verify that the signal is annunciated at the building main fire alarm panel.

**[F] 919.15.2.3 Grade D breathing air verification.** A minimum of two air samples shall be taken from separate air fill stations and submitted to an independent certified gas analyst laboratory to verify the system cleanliness and that the air meets all applicable standards for breathing air systems to include, but not limited to 1) NFPA 1500; 2) NFPA 1989 Standard on Breathing Air Quality for Emergency Services Respiratory Protection; and 3) OSHA Standard 29 CFR 1910.134(i)(1) – Grade D Breathing Air.

The laboratory shall submit a written report to the testing contractor and the *fire code official* documenting the air analysis complies with the above requirements.

**[F] 919.15.2.4 Air fill station inlets secured during testing.** During the period of air quality analysis, the air fill station inlets shall be secured so that no air can be introduced into the system and each air fill station shall be provided with a sign stating, “AIR QUALITY ANALYSIS IN PROGRESS, DO NOT FILL OR USE ANY AIR FROM THIS SYSTEM.” This sign shall be a minimum of 8-1/2 X 11 inch with a minimum of 1-inch lettering.

**[F] 919.15.2.5 Mobile air unit compatibility verification.** Each external mobile air connection panel shall be tested for compatibility with the fire department mobile air unit.

**[F] 919.15.2.6 SCBA compatibility verification.** Each air fill station and air fill panel shall be tested for compatibility with the fire department self-contained breathing cylinders and apparatus.

**[F] 919.15.2.7 Performance criteria verification.** The air storage system shall be tested for its ability to meet the performance criteria outlined in section 919.12.3.

**[F] 919.15.2.8 Air monitoring system testing.** The air monitoring system shall be tested for the capability to meet the requirements of this section.

**[F] 919.15.2.9 Commissioning closeout.** Upon successful completion of all testing procedures, the system shall be filled to normal operating pressure of 5,500 PSIG, all control valves shall be placed in their normal operating position, and all doors shall be

secured and locked. Five sets of keys properly identified shall be provided to the fire department.

**[F] 919.15.3 System acceptance and final commissioning.**

**[F] 919.15.3.1 Certification.** A certificate documenting that the entire firefighter air replenishment system has been installed, tested and commissioned in accordance with this Section 919 and the *approved plans shall be stamped by a Washington State licensed engineer and submitted to the fire code official.*

**[F] 919.15.3.2 Final acceptance.** Prior to the final acceptance of the firefighter air replenishment system and issuance of the certificate of occupancy, the building owner or authorized agent shall provide for the regular testing and certification of the firefighter air replenishment system. Written verification of regular testing and certification shall be provided to the fire department.

**[F] 919.15.3.3 Regular testing and certification.** The firefighter air replenishment system shall be continuously maintained in an operative condition and shall be inspected not less than annually. This shall include verifying the system compatibility with the fire department mobile air unit and self-contained breathing apparatus, and shall include verifying the system ability to maintain 5,500 PSIG working pressure at 70°F with a 4:1 safety factor, the operability of the low-pressure monitor, air monitoring system and the system ability to comply with the air quality requirements of this section. The building owner, authorized agent or testing contractor shall notify the fire department of any scheduled test of the system. On a quarterly basis two air samples shall be taken from two separate air fill stations and tested to verify compliance with NFPA 1989. The laboratory test results shall be maintained on site and readily available for review by the fire department.

**Point of Information**

Annual test reports shall be submitted online via [www.TheComplianceEngine.com](http://www.TheComplianceEngine.com) within 5 business days after completing the test.

**[F] 919.15.3.4 Final commissioning.** Upon satisfactory completion of all testing procedures, receipt of the Washington State licensed engineer's stamped certification, verification of a regular testing and maintenance contract, and fire department training (unless waived by

[the fire department](#)), the system shall be considered complete. The firefighter air replenishment system shall then be considered ready for use by firefighters and other first responders in an emergency incident.

**[F] 919.16 Special requirements.** [Any modification or changes to components contained within or to the “systems” described in this section shall be requested through the fire code official and approved in writing. This condition does not prohibit emergency repairs; however, a written report of the emergency repairs and testing is required to be submitted by the testing and certification contractor.](#)

**23.10.1008.2.3 International Building Code Section 1008.2.3 amended – Exit discharge.** International Building Code Section 1008.2.3 is hereby amended to read as follows:

**Commented [SG8]:** Ensures that building occupants can safely egress away from the building in an emergency.

**1008.2.3 Exit discharge.** [Illumination shall be provided along the path of travel for the exit discharge from each exit to the public way.](#)

**Exception:** [Illumination shall not be required where the path of the exit discharge meets both of the following requirements:](#)

- [1. The path of exit discharge is illuminated from the exit to a safe dispersal area complying with Section 1028.5.](#)
- [2. A dispersal area shall be illuminated to a level not less than 1 footcandle \(11 lux\) at the walking surface.](#)

**23.10.1008.3.4 International Building Code Section 1008.3.4 amended – Duration.** International Building Code Section 1008.3.4 is hereby amended to read as follows:

**Commented [SG9]:** Aligns with the National Electrical Code.

**1008.3.4 Duration.** The emergency power system shall provide power for a duration of not less than 90 minutes, [or such time as stipulated by Section 2702 and Table 2702 when applicable for high-rise or underground buildings](#), and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.



**23.10.1009.8.1 International Building Code Section 1009.8.1 amended – System requirements.** International Building Code Section 1009.8.1 is hereby amended to read as follows:

Commented [SG10]: Aligns with the National Electrical Code.

**1009.8.1 System requirements.** Two-way communication systems shall provide communication between each required location and the *fire command center* or a central control point location *approved* by the fire department. Where the central control point is not a *constantly attended location*, thea two-way communication system shall have a timed automatic telephone dial-out capability that provides two-way communication with an approved supervising station or 9-1-1. The two-way communication system shall include both audible and visible signals. The two-way communication system shall have a battery backup or an approved alternate source of power that is capable of a duration of operation in accordance with Section 2702 and Table 2702 upon failure of the normal power source.

**23.10.1011.12.2 International Building Code Section 1011.12.2 amended – Roof access.** International Building Code Section 1011.12.2 is hereby amended to read as follows:

Commented [SG11]: Aligns with Firefighting operations.

**1011.12.2 Roof access.** Where a *stairway* is provided to a roof, access to the roof shall be provided through a *penthouse* complying with Section 1511.2.

**Exception:** In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m<sup>2</sup>) in area and having a minimum dimension of 32 feet (914 mm) ~~(640 mm)~~.

**23.10.1026 International Building Code Section 1026 amended – Horizontal exits.** International Building Code Section 1026 is hereby amended by the addition of a new section 1026.6 to read as follows:

Commented [SG12]: Aligns with Firefighting operations.

....

1026.6 Fire Alarm and Sprinkler Zones. When horizontal exits are provided, the fire alarm and sprinkler systems shall be zoned to coincide with the horizontal exits.

Exception: Sprinkler zoning is not required in existing construction if fire alarm initiating devices provide the same level of occupant notification that a zoned sprinkler system would provide.

**23.10.1105.1.1 International Building Code Section 1105.1.1 amended – Automatic doors.** International Building Code Section 1105.1.1 is hereby amended to read as follows:

**Commented [SG13]:** Requested by Fire Dept Emergency Medical Services.

**1105.1.1 Automatic doors.** In facilities with the occupancies and building occupant loads indicated in Table 1105.1.1, *public entrances* that are required to be *accessible* shall have one door be either a full *power-operated door* or a *low-energy power-operated door*. Where the *public entrance* includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.

**Table 1105.1.1  
PUBLIC ENTRANCE WITH POWER-OPERATED  
DOORS<sup>a</sup>**

<b>OCCUPANCY</b>	<b>BUILDING OCCUPANT LOAD GREATER THAN</b>
A-1, A-2, A-3, A-4	300
B, M, R-1	500
<u>B – Medical Office Building<sup>b</sup></u>	<u>10</u>
<u>I – Alcohol &amp; Drug Treatment Centers</u>	<u>10</u>
<u>I – Assisted Living Facilities, Hospitals &amp; Nursing Homes</u>	<u>Any</u>

**FOOTNOTES:**

a. In mixed-use facilities where the total sum of the occupant load is greater than those listed, the most restrictive building occupant load shall apply.

b. Medical Office Building shall include Ambulatory Care Facilities, Outpatient Clinics and facilities licensed by Washington State DSHS as Ambulatory Surgery Facility or Medicare licensed Ambulatory Surgery Centers.

**23.10.1607.3 International Building Code Section 1607.3 amended to add subsection 1607.3.1 – Floor and roof design load posting.** International Building Code Section 1607.3 is hereby amended to add a new subsection to read as follows:

**Commented [SG14]:** Ensures that floor structural load limits for heavy storage loads are posted and clearly identified.

1607.3.1 Floor and roof design load posting. In commercial or industrial buildings, for each floor or portion thereof designed for live loads exceeding 125 psf, such design live loads shall be conspicuously posted, on durable signs, by the owner or the owner's authorized agent in that part of each story in which they apply. It shall be unlawful to remove or deface such signs.

....

**23.10.1607.8.5 International Building Code Section 1607.8.5 amended – Posting.** International Building Code Section 1607.8.5 is hereby amended to read as follows:

**1607.8.5 Posting.** The maximum weight of vehicles allowed into or on a garage or other structure shall be posted by the owner or the owner's authorized agent in accordance with Section 1607.3.1406-1.

**Commented [SG15]:** Correcting reference since BCC 23.05 replaces IBC Chapter 1 in City of Bellevue adoption.

**23.10.1608.1 International Building Code Section 1608.1 deleted and replaced – Roof snow loads.** International Building Code Section 1608.1 is hereby deleted and replaced by the following section:

**Commented [SG16]:** Indicating snow load design criteria for local conditions.

**1608.1 General.** Design snow loads shall be determined in accordance with Chapter 7 of ASCE 7, but the design roof load shall not be less than determined by Section 1607.

**1608.1.1 Roof Snow Load.** Roofs shall be designed for a uniform snow load of at least 25 psf. Drift snow load and sliding snow load shall be considered for:

1. Buildings and other structures with a site elevation greater than 700 feet above sea level.
2. Risk category III and IV structures
3. Buildings and other structures with an unusual roof configuration that may result in substantial snow drift loads.

**23.10.1608.2 International Building Code Section 1608.2 deleted and replaced – Ground snow loads.** International Building Code Section 1608.2 is hereby deleted and replaced by the following section:

**Commented [SG17]:** Indicating snow load design criteria for local conditions.

**1608.2 Ground snow loads.** The ground snow loads to be used in determining the design snow loads for roofs shall be determined in accordance with **ASCE 7** or **Figure 1608.2** for the contiguous United States and **Table 1608.2** for Alaska. Site-specific case studies shall be made in areas designated "CS" in **Figure 1608.2**. Ground snow loads for sites at elevations above the limits indicated in **Figure 1608.2** and for all sites within the CS area shall be per "Snow Load Analysis for Washington, 2nd. Edition" published by Structural Engineers Association of Washington (July 2001), or "King County Ground Snow Load Analysis Map" (July 2001).

**23.10.1612.2 International Building Code Section 1612.2 amended – Design and construction.** International Building Code Section 1612.2 is hereby amended to read as follows:

**Commented [SG18]:** All Section 1612 amendments are to align with the FEMA National Floodplain Insurance Program and Bellevue Land Use Code.

**1612.2 Design and construction.** The design and construction of buildings and structures located in *flood hazard areas*, including ~~*coastal high hazard areas and coastal A zones*~~ *flood hazard areas* subject to high-velocity wave action, shall be in accordance with Chapter 5 of ASCE 7, ~~and ASCE 24,~~ and [Bellevue City Code Section 20.25H.175](#).

**23.10.1612.3 International Building Code Section 1612.3 amended – Establishment of flood hazard areas.** International Building Code Section 1612.3 is hereby amended to read as follows:

**1612.3 Establishment of flood hazard areas.** To establish *flood hazard areas*, the applicable governing authority shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study (FIS) for ~~[INSERT NAME OF JURISDICTION]~~ [King County, Washington, and Incorporated Areas](#)," dated ~~[INSERT DATE OF ISSUANCE]~~ [August 19, 2020](#), and any ~~revisions thereto as amended or revised~~ with the accompanying

Flood Insurance Rate Maps (FIRMs), ~~dated August 19, 2020, and any revisions thereto and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto.~~

The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section.

**1612.3.1 Design flood elevations.** Where *design flood elevations* are not included in the *flood hazard areas* established in Section 1612.3, or where *floodways* are not designated, the *building official* is authorized to require the applicant to do one of the following:

1. Obtain and reasonably utilize any *design flood elevation* and *floodway* data available from a federal, state or other source.
2. Determine the *design flood elevation* or *floodway* in accordance with ~~accepted hydrologic and hydraulic engineering practices used~~ [City of Bellevue Land Use Code Section 20.25H.175A and Surface Water Engineering Standards Section D4-05.5, "Floodplain/Floodway Analysis."](#) to define special *flood hazard areas*. Determinations shall be undertaken by a *registered design professional* who shall document that the technical methods used reflect currently accepted engineering practice.

**1612.3.2 Determination of impacts.** In riverine *flood hazard areas* where *design flood elevations* are specified but *floodways* have not been designated, the applicant shall provide a *floodway* analysis that demonstrates that the proposed work will ~~not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction of the applicable governing authority, meet~~ [City of Bellevue Surface Water Engineering Standards, Section D4-05.5, "Floodplain/Floodway Analysis."](#)

**23.10.1612.4 International Building Code Section 1612.4 amended – Flood hazard documentation.** International Building Code Section 1612.4 is hereby amended to read as follows:

**1612.4 Flood hazard documentation.** The following documentation shall be prepared and sealed by a *registered design professional* and submitted to the *building official*:

1. For construction in *flood hazard areas* ~~other than coastal high hazard areas or coastal A zones:~~

1.1. The elevation of the *lowest floor*, including the basement, as required by the lowest floor elevation inspection in [Section 140.3.3 Bellevue City Code 23.05.130\(C\)](#) and for the final inspection in [Section 140.3.11.1 Bellevue City Code 23.05.130\(G\)](#).

1.2. For fully enclosed areas below the *design flood elevation* where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, *construction documents* shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24.

1.3. For *dry floodproofed* nonresidential buildings, *construction documents* shall include a statement that the *dry floodproofing* is designed in accordance with ASCE 24 and shall include the flood emergency plan specified in Chapter 6 of ASCE 24.

2. For construction in *coastal high hazard areas* and *coastal A zones*:

2.1. The elevation of the bottom of the lowest horizontal structural member as required by the *lowest floor* elevation inspection in [Section 140.3.3 Bellevue City Code 23.05.130\(C\)](#) and for the final inspection in [Section 140.3.11.1 Bellevue City Code 23.05.130\(G\)](#).

2.2. *Construction documents* shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and *flood loads* acting simultaneously on all building components, and other *load* requirements of Chapter 16.

2.3 For breakaway walls designed to have a resistance of more than 20 psf (0.96 kN/m<sup>2</sup>) determined using *allowable stress design*, *construction documents* shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

2.4 For breakaway walls where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, *construction documents* shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24.

**23.10.1613.1 International Building Code Section 1613.1 amended – Scope.**  
International Building Code Section 1613.1 is hereby amended to read as follows:

**Commented [SG19]:** Aligns with National Fire Protection Association seismic bracing requirements.

**1613.1 Scope.** Every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with Chapters 11, 12, 13, 15, 17 and 18 of ASCE 7, as applicable. The *seismic design category* for a structure is permitted to be determined in accordance with Section 1613 or ASCE 7.

**Exceptions:**

1. Detached one- and two-family dwellings, assigned to *Seismic Design Category* A, B, or C, or located where the mapped short-period spectral response acceleration,  $S_s$ , is less than 0.4 g.
2. The *seismic force-resisting system* of wood-frame buildings that conform to the provisions of Section 2308 are not required to be analyzed as specified in this section.
3. Agricultural storage structures intended only for incidental human occupancy.
4. Structures that require special consideration of their response characteristics and environment that are not addressed by this code or ASCE 7 and for which other regulations provide seismic criteria, such as vehicular bridges, electrical transmission towers, hydraulic structures, buried utility lines and their appurtenances and nuclear reactors.
5. References within ASCE 7 to Chapter 14 shall not apply, except as specifically required herein.

[6. Seismic design of automatic sprinkler systems when hanging, bracing, and restraint is designed and installed in accordance with the currently adopted edition of NFPA 13 and the coefficient  \$C\_p\$  for seismic bracing design calculations in accordance with NFPA 13 is either](#)

[a value of 0.70, or a value based on site specific USGS data.](#)

**23.10.1704.2 International Building Code Section 1704.2 amended – Special inspections and tests.** International Building Code Section 1704.2 is hereby amended to read as follows:

**Commented [SG20]:** Section 1704 and 1705 proposed amendments are to correct 23.05 BCC administrative code references and clarify inspection procedures.

**1704.2 Special inspections and tests.** Where application is made to the *building official* for construction as specified in [ChapterSection 105 23.05 of the Bellevue City Code](#), the owner or the owner’s authorized agent, other than the contractor, shall employ one or more *approved agencies* to provide *special inspections* and tests during construction on the types of work specified in Section 1705 and identify the *approved agencies* to the *building official*. These *special inspections* and tests are in addition to the inspections by the *building official* that are identified in [Section 110 Bellevue City Code 23.05.130](#).

**Exceptions:**

1. Special inspections and tests are not required for construction of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.
2. Unless otherwise required by the building official, special inspections and tests are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.
3. Special inspections and tests are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.1.2 or the conventional light-frame construction provisions of Section 2308.
4. The contractor is permitted to employ the approved agencies where the contractor is also the owner.

**23.10.1704.2.3 International Building Code Section 1704.2.3 amended - Statement of special inspections.** International Building Code Section 1704.2.3 is hereby amended to read as follows:



**1704.2.3 Statement of special inspections.** The applicant shall submit a statement of *special inspections* in accordance with [Section 107.1 Bellevue City Code 23.05.105\(A\)](#) as a condition for permit issuance. This statement shall be in accordance with Section 1704.3.

**Exception:** A statement of *special inspections* is not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.1.2 or the conventional light-frame construction provisions of Section 2308.

**23.10.1704.6 International Building Code Section 1704.6 amended – Structural observations.** International Building Code Section 1704.6 is hereby amended to read as follows:

**1704.6 Structural observations.** Where required by the provisions of Section 1704.6.1, 1704.6.2 or 1704.6.3, the owner or the owner's authorized agent shall employ a *registered design professional* to perform *structural observations*. The structural observer shall visually observe representative locations of structural systems, details and load paths for general conformance to the approved construction documents. *Structural observation* does not include or waive the responsibility for the inspections in [Section 1409 Bellevue City Code 23.05.130](#) or the *special inspections* in Section 1705 or other sections of this code.

....

**23.10.2701 International Building Code Section 2701 amended – GENERAL.** International Building Code Section 2701 is hereby amended to read as follows.

**Commented [SG21]:** Chapter 27 proposed amendments are to align with the National Electrical Code and Firefighting operations.

#### SECTION 2701 GENERAL

**2701.1 Scope.** The provisions of this chapter and [NFPA 70 the Washington Cities Electrical Code](#) shall govern the design, construction, erection and installation of the electrical components, appliances, equipment and systems used in buildings and structures covered by this code. The *International Fire Code*, [the International Property Maintenance Code Bellevue City Code](#), and [NFPA 70 the Washington Cities Electrical Code](#) shall govern the use and maintenance of electrical components, appliances, equipment and

systems. The *International Existing Building Code* and ~~NFPA 70~~[the Washington Cities Electrical Code](#) shall govern the alteration, repair, relocation, replacement and addition of electrical components, appliances, or equipment and systems.

**23.10.2702 International Building Code Section 2702 amended – EMERGENCY AND STANDBY POWER SYSTEMS.** International Building Code Section 2702 is hereby amended to read as follows.

**SECTION 2702**  
**EMERGENCY AND LEGALLY REQUIRED STANDBY POWER SYSTEMS**

**[F] 2702.1 General.** Emergency power systems and [legally required](#) standby power systems shall comply with Sections 2702.1.1 through 2702.1.8 [and Table 2702](#).

**[F] 2702.1.1 Stationary generators.** Stationary emergency and [legally required](#) standby power generators required by this code shall be *listed* in accordance with UL 2200.

**[F] 2702.1.2 Fuel-line piping protection.** Fuel lines supplying a generator set inside a *high-rise building* shall be separated from areas of the *building* other than the room the generator is located in by one of the following methods:

1. A fire-resistant pipe-protection system that has been tested in accordance with UL 1489. The system shall be installed as tested and in accordance with the manufacturer's installation instructions, and shall have a rating of not less than 2 hours. Where the *building* is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required rating shall be reduced to 1 hour.

2. An assembly that has a fire-resistance rating of not less than 2 hours. Where the *building* is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required fire-resistance rating shall be reduced to 1 hour.

3. Other approved methods.

**[F] 2702.1.3 Installation.** Emergency power systems and [legally required](#) standby power systems required by this code or the *International Fire Code* shall be installed in accordance with the

*International Fire Code*, ~~NFPA-70~~ [Washington Cities Electrical Code](#), NFPA 110 and NFPA 111.

**[F] 2702.1.4 Load transfer.** Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. [Legally required](#) standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost, unless specified otherwise in this code. [Transfer to full emergency or legally required standby power shall take place within the maximum time to energize loads specified in Table 2702.](#)

**[F] 2702.1.5 Load duration.** Emergency power systems and [legally required](#) standby power systems shall be designed to provide the required power for a minimum duration of 8 hours [for fire pumps serving high-rise buildings in accordance with NFPA 20, and a minimum duration of 2 hours for other systems](#) without being refueled or recharged, unless specified otherwise in this code.

**[F] 2702.1.6 Uninterruptable power source.** An uninterrupted source of power shall be provided for equipment when required by the manufacturer's instructions, the listing, this code or applicable referenced standards.

**[F] 2702.1.7 Interchangeability.** Emergency power systems shall be an acceptable alternative for installations that require [legally required](#) standby power systems.

**[F] 2702.1.8 Group I-2 occupancies.** In Group I-2 occupancies located in flood hazard areas established in Section 1612.3, where new essential electrical systems are installed, and where new essential electrical system generators are installed, the systems and generators shall be located and installed in accordance with ASCE 24. Where connections for hookup of temporary generators are provided, the connections shall be located at or above the elevation required in ASCE 24.

**[F] 2702.1.9 Equipment room.**

[If a legally required standby or emergency power system includes a generator set inside a building, the generator set shall be located in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, to separate it from the remainder of the building, the transfer switches, and from the normal](#)

power source including transformers and distribution equipment. The transfer switches shall also be in a separate room enclosed with 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, to separate it from the remainder of the building. Power distribution from the emergency source to the emergency transfer switch shall be by an independent route from the normal power source. Independent routes shall mean either a physical separation distance of not less than 50 feet, or a minimum of 1-hour fire-resistance rated separation. System supervision with manual start and transfer features shall be provided at the fire command center or an approved location when a fire command center is not required. Such equipment rooms shall be ventilated directly to the exterior for generator combustion air and radiator cooling air. Any ducts required for such ventilation shall not be dampered and shall be fire-resistance rated to the same level of protection as that required for the equipment room. The requirements of this subsection shall not apply to optional tenant-owned or landlord-owned generator sets.

**Exception:** Transfer switches shall be permitted to be in the same room as the legally required standby or emergency power system generator sets when inside or serving other than: 1) a high-rise building in accordance with Section 403; 2) an underground building in accordance with Section 405; and 3) a hospital in accordance with Section 407.

#### **[F] 2702.1.10 Smoke control power systems**

Smoke control equipment and systems requiring legally required standby or emergency power shall be supplied with two sources of power. Primary power shall be from the normal building power system. Legally required standby power or emergency power shall be from an approved source complying with the *Washington Cities Electrical Code*. The legally required standby power or emergency power source and its transfer switches shall be in separate rooms from the normal power transformers and switchgears, and ventilated directly to and from the exterior. The room shall be completely enclosed in not less than 1-hour fire barriers constructed in accordance with Section 707, or 1-hour horizontal assemblies constructed in accordance with Section 711, or both, except 2-hour fire-resistance construction shall be required for high-rise and underground buildings per Sections 403 and 405 respectively. Power distribution from the two sources shall be by independent routes to the room containing the automatic transfer switch(s). Independent

routes shall mean a physical distance of 50 feet or a minimum 1-hour fire-resistance rated separation. Transfer to full emergency power shall be automatic and shall take place within the maximum time to energize loads. The systems shall comply with the *Washington Cities Electrical Code*.

**EXCEPTION:** Ventilation is not required for rooms containing only transfer switches.

**[F] 2702.1.11 Fuel-fired generator sets and fuel storage location.**

Fuel-fired generator sets and associated fuel storage, including optional landlord-owned or tenant-owned generator sets, located more than 75 feet above the lowest level of Fire Department vehicle access, or located at a floor level more than 30 feet below the lowest level of exit discharge, require the approval of the *fire code official*.

**[F] 2702.2 Where required.** Emergency and legally required standby power systems shall be provided where required by Sections 2702.2.1 through 2702.2.19 and other sections of this code.

**[F] 2702.2.1 Ambulatory care facilities.** Essential electrical systems for ambulatory care facilities shall comply with Section 422.6.

**[F] 2702.2.2 Elevators and platform lifts.** Legally required Sstandby power shall be provided for elevators and platform lifts used as accessible means of egress as required in Sections 1009.4.1, and 1009.5, 3003.1, 3007.8 and 3008.8. Emergency power shall be provided for elevators in high-rise buildings where required by Table 2702.

**[F] 2702.2.3 Emergency responder communication coverage systems.** Legally required Sstandby power shall be provided for in-building 2-way emergency responder communication coverage systems required in Section 918 and the *International Fire Code*. The standby power supply shall be capable of operating the in-building 2-way emergency responder communication coverage system at 100-percent system operation capacity for a duration of not less than 12 hours.

**[F] 2702.2.4 Emergency voice/alarm communication systems.** Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72. Standby power

~~shall be provided for emergency voice/alarm communication systems in accordance with NFPA 72.~~

**[F] 2702.2.5 Exhaust systems.** ~~Legally required S~~standby power shall be provided for common exhaust systems for domestic kitchens located in multistory structures as required in Section 505.5 of the *International Mechanical Code*. ~~Legally required S~~standby power shall be provided for common exhaust systems for clothes dryers located in multistory structures as required in Section 504.10 of the *International Mechanical Code* and Section 614.10 of the *International Fuel Gas Code*.

**[F] 2702.2.6 Exit signs.** Emergency power shall be provided for exit signs as required in Section 1013.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

**[F] 2702.2.7 Gas detection system.** Emergency or [legally required](#) standby power shall be provided for gas detection systems in accordance with the *International Fire Code*.

**[F] 2702.2.8 Group I-2 occupancies.** Essential electrical systems for Group I-2 occupancies shall be in accordance with Section 407.11.

**[F] 2702.2.9 Group I-3 occupancies.** Emergency power shall be provided for power-operated doors and locks in Group I-3 occupancies as required in Section 408.4.2.

**[F] 2702.2.10 Hazardous materials.** Emergency or [legally required](#) standby power shall be provided in occupancies with hazardous materials where required by the *International Fire Code*.

**[F] 2702.2.11 High-rise buildings.** Emergency and [legally required](#) standby power shall be provided in high-rise buildings as required in [Table 2702Section 403.4.8](#).

**[F] 2702.2.12 Hydrogen fuel gas rooms.** ~~Legally required s~~Standby power shall be provided for hydrogen fuel gas rooms as required by the *International Fire Code*.

**[F] 2702.2.13 Laboratory suites.** ~~Legally required S~~standby ~~or emergency~~ power shall be provided for in accordance with Section 5004.7 of the *International Fire Code* where *laboratory suites* are located above the sixth story above grade plane or located in a story below grade plane.

**[F] 2702.2.14 Means of egress illumination.** Emergency power shall be provided for means of egress illumination as required in Section 1008.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

**[F] 2702.2.15 Membrane structures.** [Legally required Sstandby](#) power shall be provided for auxiliary inflation systems in permanent membrane structures as required in Section 3102.8.2. [Legally required Sstandby](#) power shall be provided for a duration of not less than 4 hours. Auxiliary inflation systems in temporary air-supported and air-inflated membrane structures shall be provided in accordance with Section 3103.10.4 of the *International Fire Code*.

**[F] 2702.2.16 Semiconductor fabrication facilities.** Emergency power shall be provided for semiconductor fabrication facilities as required in Section 415.11.10.

**[F] 2702.2.17 Smoke control systems.** [EmergencyStandby](#) power shall be provided for smoke control systems as required in Sections 404.7, 909.11, 909.20.6.2 and 909.21.5. [Legally required standby power systems shall be provided for pressurization systems in low-rise buildings in accordance with Washington State Building Code Section 504.4.1 and International Building Code Sections 909.20.6 and 909.21.5.](#)

**[F] 2702.2.18 Special purpose horizontal sliding, accordion or folding doors.** [Legally required Sstandby](#) power shall be provided for special purpose horizontal sliding, accordion or folding doors as required in Section 1010.1.4.3. The standby power supply shall have a capacity to operate not fewer than 50 closing cycles of the door.

**[F] 2702.2.19 Underground buildings.** Emergency and [legally required](#) standby power shall be provided in underground buildings as required in Section 405.

**[F] 2702.3 Critical circuits.** Required critical circuits shall be protected using one of the following methods:

1. Cables, used for survivability of required critical circuits, that are listed in accordance with UL 2196 and have a fire-resistance rating of not less than 1 hour.
2. Electrical circuit protective systems having a fire-resistance rating of not less than 1 hour. Electrical circuit protective

systems are installed in accordance with their listing requirements.

3. Construction having a fire-resistance rating of not less than 1 hour.

**[F] 2702.4 Maintenance.** Emergency and [legally required](#) standby power systems shall be maintained and tested in accordance with the *International Fire Code*.

**TABLE 2702  
 EMERGENCY AND LEGALLY REQUIRED STANDBY POWER**

<a href="#">Type of Equipment</a>	<a href="#">Maximum Time to Energize Loads</a>	<a href="#">Minimum Run Time (Duration)</a>	<a href="#">IBC Section</a>	<a href="#">IFC or NFPA Section</a>
<b><a href="#">Emergency Power Systems</a><sup>1</sup></b>				
<a href="#">Exit signs</a>	<a href="#">10 seconds</a>	<a href="#">2 hours</a>	<a href="#">1013.6.3</a>	<a href="#">IFC 1013.6.3 Exit signs</a>  <a href="#">NFPA 70</a>
<a href="#">Exit illumination</a>	<a href="#">10 seconds</a>	<a href="#">2 hours</a>	<a href="#">1008.3</a>	<a href="#">IFC 1008.3</a>
<a href="#">Any emergency voice/alarm communication including area of refuge communication systems (barrier-free and horizontal exits)</a>	<a href="#">Per NFPA 72</a>	<a href="#">24 hours (battery);</a> <a href="#">4 hours (generator)</a>	<a href="#">402.7.3,</a> <a href="#">402.7.4, and</a> <a href="#">907.5.2.2 Covered mall buildings</a>  <a href="#">403.4.8 and</a> <a href="#">907.5.2.2 High-rises</a>  <a href="#">405.8, and</a> <a href="#">907.5.2.2 Underground buildings</a>	<a href="#">IFC 907.2.20 Covered mall buildings</a>



			<a href="#">907.2.1, and 907.5.2.2 Assembly occupancies</a>	<a href="#">IFC 907.2.1.1 Assembly occupancies</a>  <a href="#">NFPA 72</a>  <a href="#">iFC 907.2.12 Special amusement buildings</a>
<a href="#">Fire detection and fire alarm</a>	<a href="#">Per NFPA 72</a>	<a href="#">24 hours (battery); 4 hours (generator)</a>	<a href="#">403.4.8 High-rises</a>  <a href="#">405.8 Underground buildings</a>  <a href="#">909.20.7.2 Smokeproof enclosures</a>   <a href="#">907</a>	          <a href="#">IFC 907.6.2 Power supply</a>  <a href="#">IFC 907.2.12 Special amusement buildings</a>  <a href="#">NFPA 72</a>
<a href="#">Smoke control systems in high-rise buildings, underground buildings, covered mall buildings, and atriums, including energy management systems if used for smoke control</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>	<a href="#">403.4.8 High-rises</a>  <a href="#">404.7 Atriums</a>  <a href="#">405.8 Underground buildings</a>  <a href="#">909.11 Smoke control</a>	<a href="#">IFC 909.11 Emergency power</a>
	<a href="#">10 seconds</a>	<a href="#">8 hours (NFPA 20)</a>	<a href="#">403.4.8 High-rises</a>	<a href="#">NFPA 20</a>

<a href="#">Fire pumps in high-rise buildings and underground buildings</a>			<a href="#">405.8 Underground buildings</a>	<a href="#">IFC 913.2 All Fire Pumps</a>
<a href="#">Smokeproof enclosures and elevator shaft pressurization</a>	<a href="#">60 seconds for pressurization</a>	<a href="#">4 hours</a>	<a href="#">403.4.8 High-rises 909 and 909.20.7.2</a>	-
<a href="#">Any shaft exhaust fans required to run continuously in lieu of dampers in high-rise and underground buildings</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	<a href="#">717.5.3</a>	-
<a href="#">Fire service or occupant evacuation elevator car operation in high-rise and underground buildings (including control system, motor controller, operation control, signal equipment, machine room cooling/heating, etc.)</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	<a href="#">3003, 3007, and 3008</a>	
<a href="#">Elevator car lighting and communications in high-rise and underground buildings</a>	<a href="#">10 seconds</a>	<a href="#">4 hours</a>	<a href="#">3003, 3007, and 3008</a>	
<a href="#">Lights, heating, and cooling for building fire command center and mechanical equipment rooms serving the fire command center</a>	<a href="#">60 seconds</a>	<a href="#">24 hours</a>	-	
<a href="#">Power (other than lights, heating and cooling) for building fire command center</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	-	-
<a href="#">Mechanical and electrical systems required by IFC Chapter 27 (hazardous</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	-	<a href="#">Chapter 27</a>

<a href="#">materials including UPS rooms)</a>				
<b><a href="#">Legally Required Standby<sup>1</sup></a></b>				
<a href="#">Exhaust fans for any loading dock located interior to a building</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	-	-
<a href="#">Transformer vault ventilation equipment</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	-	-
<a href="#">Heat tape for sprinkler lines and heating in sprinkler riser rooms</a>	<a href="#">60 seconds</a>	<a href="#">24 hours</a>	-	-
<a href="#">Fuel pump system for any legally required standby system</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	-	-
<a href="#">Elevators used for accessible means of egress (in other than high-rise and underground buildings)</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>		
<a href="#">Elevators (other than fire service or occupant evacuation elevators) in high-rise and underground buildings</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>		
<a href="#">Any shaft exhaust fans required to run continuously in lieu of dampers (in other than high-rise and underground buildings)</a>	<a href="#">60 seconds</a>	<a href="#">4 hours</a>	<a href="#">717.5.3</a>	
<a href="#">Auxiliary inflation systems</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>	<a href="#">3102.8.2</a>	<a href="#">IFC 3103.10.4</a>
<a href="#">Special purpose horizontal sliding, accordion or folding doors</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>	<a href="#">1010.3.3</a>	<a href="#">IFC 1010.3.3</a>
<a href="#">Hydrogen fuel gas rooms</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>	<a href="#">2702.2.12</a>	<a href="#">IFC 5808.7 &amp; IFC 1203</a>

<a href="#">Firefighter air replenishment systems (FARS)</a>	<a href="#">60 seconds</a>	<a href="#">2 hours</a>	<a href="#">919.7.2</a>	<a href="#">919.7.2</a>
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**FOOTNOTE:**

[1. The fuel pump and associated systems for the emergency or legally required standby generator shall be provided with power from the generator to maintain fuel supply.](#)

**23.10.2801.1 International Building Code Section 2801.1 Amended – Scope.**  
International Building Code Section 3007.1 is hereby amended to read as follows:

**Commented [SG22]:** Correcting reference to BCC.

**[M] 2801.1 Scope.** The provisions of this chapter, the *International Mechanical Code* and the *International Fuel Gas Code* shall govern the design, construction, erection and installation of mechanical appliances, equipment and systems used in buildings and structures covered by this code. Masonry chimneys, fireplaces and barbecues shall comply with the *International Mechanical Code* and Chapter 21 of this code. The *International Fire Code*, ~~*International Property Maintenance Code*~~ [Bellevue City Code](#), the *International Mechanical Code* and the *International Fuel Gas Code* shall govern the use and maintenance of mechanical components, appliances, equipment and systems. The *International Existing Building Code*, the *International Mechanical Code* and the *International Fuel Gas Code* shall govern the alteration, repair, relocation, replacement and addition of mechanical components, appliances, equipment and ~~systems~~.

**Commented [SG23]:** Chapter 30 proposed amendments are to align with Firefighting operations and National Electrical Code.

**23.10.3007.1 International Building Code Section 3007.1 Amended – General.**  
International Building Code Section 3007.1 is hereby amended to read as follows:

**3007.1 General.** Where required by Section 403.6.1 [and 405.4.3.1](#), every floor, ~~above and including the lowest level of fire department vehicle access~~ of the building shall be served by fire service access elevators complying with Sections 3007.1 through 3007.9. Except as modified in this section, fire service access elevators shall be installed in accordance with this chapter and ASME A17.1/CSA B44.

**Exceptions:**

- [1. Fire service access elevators are not required for underground buildings per Section 405 where the building elevators serve floor levels located not more than 80 feet below the level of exit](#)

~~discharge. Elevators that only service an open or enclosed parking garage and the lobby of the building shall not be required to serve as fire service access elevators.~~

2. ~~Mezzanines located below the 7th story are not required to be served by fire service access elevators. The elevator shall not be required to serve the top floor of a building where that floor is utilized only for equipment for building systems.~~

**23.10.3007.6.2 International Building Code Section 3007.6.2 Amended – Lobby enclosure.** International Building Code Section 3007.6.2 is hereby amended to read as follows:

**3007.6.2 Lobby enclosure.** The fire service access elevator lobby shall be enclosed with a *smoke barrier* having a *fire-resistance rating* of not less than 1 hour, except that lobby doorways shall comply with Section 3007.6.3.

**Exceptions:**

1. Enclosed fire service access elevator lobbies are not required at the *levels of exit discharge*.

2. Enclosed fire service access elevator lobbies are not required for elevators with pressurized hoistways.

**23.10.3007.8 International Building Code Section 3007.8 Amended – Electrical power.** International Building Code Section 3007.8 is hereby amended to read as follows:

**3007.8 Electrical power.** The following features serving each fire service access elevator shall be supplied by both normal power and emergency Type 60/Class 2/Level 1 standby power in accordance with Section 2702 and Table 2702:

1. Elevator equipment.
2. Elevator hoistway lighting.

3. *Ventilation* and cooling equipment for elevator machine rooms, control rooms, machine spaces and control spaces.
4. Elevator car lighting.

....

**23.10.3007.10 International Building Code Section 3007.10 Added – Phase I emergency recall operation.** International Building Code Section 3007.10 is hereby added to read as follows:

....

**3007.10 Phase I emergency recall operation.** Actuation of any building fire alarm-initiating device shall initiate Phase I emergency recall operation on all fire service access elevators in accordance with the requirements in ASME A17.1/CSA B44 with a 5-minute delay except for smoke detectors located in associated elevator lobbies, hoistways or elevator machine rooms. All other elevators shall remain in normal service unless Phase I emergency recall operation is manually initiated by a separate, required three-position, key-operated “Fire Recall” switch or automatically initiated by the associated elevator lobby, hoistway or elevator machine room smoke detectors. In addition, if the building also contains occupant evacuation elevators in accordance with Section 3008, an independent, three-position, key-operated “Fire Recall” switch conforming to the applicable requirements in ASME A17.1/CSA B44 shall be provided at the designated level for each fire service access elevator.

**23.10.3008.6 International Building Code Section 3008.6 amended – Occupant evacuation elevator lobby.** International Building Code Section 3008.6 is hereby amended to add new subsections 3008.6.7 and 3008.6.7.1 to read as follows:

....

**3008.6.7 Lobby status indicator.** Each occupant evacuation elevator lobby shall be equipped with a status indicator arranged to display all of the following information:

1. An illuminated green light and the message, "Elevators available for occupant evacuation," when the elevators are operating in normal service and the fire alarm system is indicating an alarm in the building.

2. An illuminated red light and the message, "Elevators out of service, use exit stairs" when the elevators are in Phase I emergency recall operation in accordance with the requirements in ASME A17.1/CSA B44.

3. No illuminated light or message when the elevators are operating in normal service.

**3008.6.7.1 Location of lobby status indicator.** Visual signals for each elevator group shall be installed on each floor served. They shall be located 84 in. (2,130 mm) to 120 in. (3,000 mm) above the floor and centered above a hall call button. Lettering shall be a minimum of 2 in. (50 mm) high and conform to A117.1 requirement 703.2.

**23.10.3008.8 International Building Code Section 3008.8 Amended – Electrical power.** International Building Code Section 3008.8 is hereby amended to read as follows:

**3008.8 Electrical power.** The following features serving each occupant evacuation elevator shall be supplied by both normal power and emergency Type 60/Class 2/Level 1 standby power in accordance with Section 2702 and Table 2702:

1. Elevator equipment.
2. *Ventilation* and cooling equipment for elevator machine rooms, control rooms, machine spaces and control spaces.
3. Elevator car lighting.

**3008.8.1 Determination of standbyemergency power load.** StandbyEmergency power loads shall be based on the determination of the number of occupant evacuation elevators in Section 3008.1.1.

....

**23.10.3102.8.2 International Building Code Section 3102.8.2 amended –**

**Standby power.** International Building Code Section 3102.8.2 is hereby amended to read as follows:

Commented [SG24]: Aligning with National Electrical Code.

**3102.8.2 Legally required standby power.** Wherever an auxiliary inflation system is required, an approved [legally required](#) standby power-generating system shall be provided. The system shall be equipped with a suitable means for automatically starting the generator set upon failure of the normal electrical service and for automatic transfer and operation of all of the required electrical functions at full power within [the time period indicated in Table 270260 seconds](#) of such service failure. [Legally required standby](#) power shall be capable of operating independently for not less than [the time period indicated in Table 27024 hours](#).

**23.10.3116 Washington State Building Code Section 3116 amended – Fixed guideway transit and passenger rail systems.** Washington State Building Code Section 3116 is hereby amended to read as follows:

**3116.1 Fixed guideway transit and passenger rail systems.** Construction of fixed guideway transit and passenger rail systems shall be in accordance with NFPA 130-~~2020~~, Standard for Fixed Guideway Transit and Passenger Rail Systems, as modified in Section 3116.2, [and as adopted and amended in Chapter 23.85 of the Bellevue City Code](#).

**3116.1.1. Means of egress.** The means of egress for fixed guideway transit and passenger rail systems shall be in accordance with NFPA 130, as adopted and amended in Chapter 23.85 of the Bellevue City Code.

**23.10.3304.1 International Building Code Section 3304.1 amended.** International Building Code Section 3304.1 is hereby amended by the addition of a new subsection 3304.1.5 to read as follows:

Commented [SG25]: Existing code requirement for shoring protection of public streets and utilities adjacent to deep excavation.

....

**[3304.1.5. Excavation and shoring near improved public places.](#)**  
[No person, firm or corporation shall excavate and/or install shoring in excess of four feet, measured vertically, on private property within any area between the vertical prolongation of the margin of an](#)



improved public place and a 100 percent slope plane (45 degrees from a horizontal plane) from the existing elevation of the margin of the traveled surface of an improved public place to the proposed elevation of the private property without first obtaining a permit from the building official to do so, and no work shall commence toward such excavation and shoring until a permit therefor has been issued by the building official. Improved public place means any street, alley, easement for water, sewer or storm drainage, or similar parcel of land which is deeded, dedicated or otherwise permanently made available to the City of Bellevue or the public for City or public use.

**23.10.3306.1 International Building Code Table 3306.1 amended – Protection of pedestrians.** International Building Code Table 3306.1 is hereby amended to read as follows:

**Commented [SG26]:** Existing code provision that clarifies required locations of pedestrian protection for large projects.

**TABLE 3306.1  
 PROTECTION OF PEDESTRIANS**

HEIGHT OF CONSTRUCTION	DISTANCE FROM CONSTRUCTION TO <u>SIDEWALK, WALKWAY, OR</u> LOT LINE	TYPE OF PROTECTION REQUIRED
8 feet or less	Less than 5 feet	Construction railings
	5 feet or more	None
More than 8 feet	Less than 5 feet	Barrier and covered walkway
	5 feet or more, but not more than one-fourth the height of construction	Barrier and covered walkway
	5 feet or more, but between one-fourth and one-half the height of construction	Barrier
	5 feet or more, but exceeding one-half the height of construction	None

**23.10.3306.2 International Building Code Section 3306.2 amended – Walkways.**

International Building Code Section 3306.2 is hereby amended to read as follows:

**3306.2 Walkways.** A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the sidewalk to be fenced or closed. A walkway shall be provided for pedestrian travel that leads from a *building* entrance or exit of an occupied structure to a public way. Walkways shall be of sufficient width to accommodate the pedestrian traffic, but shall be not less than 4 feet (1219 mm) in width. Walkways shall be provided with a durable walking surface. Walkways shall be *accessible* in accordance with Chapter 11 and shall be designed to support all imposed loads, and the design live load shall be not less than 150 pounds per square foot (psf) (7.2 kN/m<sup>2</sup>). [Where a sidewalk or walkway passes into or through, or adjacent to, an area under construction or demolition, the building official is authorized to require protection as indicated in this chapter and Table 3306.1.](#)

Section 7. Chapter 23.12 of the Bellevue City Code is hereby repealed in its entirety and replaced with a new Chapter 23.12 to read as follows:

### **Chapter 23.12 RESIDENTIAL CODE**

Sections:

- 23.12.010 Adoptions.
- 23.12.020 Amendments, additions, or exceptions to the 2021 International Residential Code.
- 23.12.301.2.1 International Residential Code Table R301.2(1) amended – Climatic and geographic design criteria.
- 23.12.322.1.4 International Residential Code Section 322.1.4 amended – Establishing the design flood elevation.
- 23.12.AT101.1 International Residential Code Appendix T Solar-Ready Provisions Section AT101.1 amended – General.

#### **23.12.010 Adoptions.**

The following code, as amended, added to or excepted in this chapter, together with all amendments and additions provided in this title, are adopted and shall be applicable within the City of Bellevue:

- A. International Residential Code.

1. Code Adoption. The 2021 Edition of the *International Residential Code* published by the International Code Council, as adopted and amended by the State Building Code Council in Chapter 51-51 WAC, excluding Chapter 1, Chapter 11, and Chapter 25 through Chapter 43; including Appendix F, Appendix Q, Appendix T, and Appendix U, is adopted, together with the 2021 *International Swimming Pool and Spa Code* published by the International Code Council, as adopted and amended in WAC 51-51, shall be applicable within the City. Where an alteration to an existing building causes the use or occupancy to be changed to one not within the scope of this code, the provisions of the 2021 *International Existing Building Code*, as adopted and amended in Chapter 23.13 of the Bellevue City Code, shall apply.

2. Scope. The provisions of the *International Residential Code*, as adopted, amended, added to, or excepted in this chapter, shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures, including adult family homes, foster family care homes and family day care homes licensed by the Washington State Department of Social and Health Services.

**Exceptions:**

1. Live/work units located in townhouses and complying with the requirements of Section 508.5 of the International Building Code shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-Family Dwellings. An automatic sprinkler system required by Section 508.5.7 of the International Building Code where constructed under the International Residential Code for One- and Two-Family Dwellings shall conform to Appendix U.
2. Owner-occupied lodging houses with one or two guestrooms shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-Family Dwellings.
3. Owner-occupied lodging homes with three to five guestrooms shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-Family Dwellings where equipped with an automatic fire sprinkler system in accordance with Appendix U.
4. A care facility with five or fewer persons receiving custodial care within a dwelling unit shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-Family Dwellings where equipped with an automatic fire sprinkler system in accordance with Appendix U.

5. A care facility with five or fewer persons receiving medical care within a dwelling unit shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-Family Dwellings where equipped with an automatic fire sprinkler system in accordance with Appendix U.

6. A care facility with five or fewer persons receiving care that are within a single-family dwelling shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-Family Dwellings where equipped with an automatic fire sprinkler system in accordance with Appendix U.

B. Washington State Energy Code.

1. Code Adoption. The *Washington State Energy Code*, as provided in RCW 19.27A.020 and as adopted by the State Building Code Council in Chapter 51-11R WAC, including Appendices RA, RB, and RC, is adopted and shall be applicable within the City, as amended, added to, or excepted in this chapter.

**23.12.020 Amendments, additions, or exceptions to the 2021 International Residential Code.** Pursuant to RCW 19.27.060, the following contains amendments, additions, or exceptions to the *International Residential Code* applicable and enforceable within the City.

**23.12.301.2.1 International Residential Code Table R301.2(1) amended – Climatic and geographic design criteria.** *International Residential Code* Table R301.2(1) and footnotes are hereby deleted and replaced to read as follows:

**Commented [SG27]:** This table stipulates local design conditions.

**TABLE R301.2**

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

NOTE: The intent of the criteria set forth in Table R301.2(1) is limited to the “prescriptive” design provisions of the International Residential Code. Where engineered design is used, structural design criteria shall be in accordance with Chapter 16 of the International Building Code.

GROUND SNOW LOAD <sup>a</sup> (psf)	WIND DESIGN				SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			ICE BARRIER UNDER-LAYMENT REQUIRED	FLOOD HAZARD <sup>e</sup>	AIR FREEZING INDEX	MEAN ANNUAL TEMP
	Speed <sup>b</sup> (mph)	Topographic effects <sup>c</sup>	Special wind region	Wind-borne debris zone		Weathering <sup>d</sup>	Frost line depth	Termite				

25 (< 500 feet above sea level)	98	Yes	No	No	D2	Moderate	12 inches	Slight to Moderate	No	N/A	113	53 °F
30 (500-600 feet above sea level)												
50 (600-1000 feet above sea level)												
70 (1000-1300 feet above sea level)												
MANUAL J DESIGN CRITERIA <sup>f</sup>												
Elevation	Altitude correction factor	Coincident wet bulb		Interior heating design temperature (maximum)		Outdoor heating design temperature		Heating temperature difference				
Elevation to be specific to site	0.99	66 °F		72 °F		24 °F		48 °F				
Latitude	Daily Range	Indoor summer design relative humidity	Design gains 50% RH	Interior cooling design temperature (minimum)		Outdoor cooling design temperature		Cooling temperature difference				
Latitude to be specific to site	Medium	50%	5	75 °F		83 °F		8 °F				

- a. Ground snow load is determined from “Snow Load Analysis for Washington, 2nd Edition” published by the Structural Engineers Association of Washington (July 2001), and “King County Ground Snow Load Analysis Map” (July 2001). Linear interpolation is permitted.
- b. The basic wind speed is determined from the basic wind speed map in Figure R301.2(2). Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.
- c. Topographic effects (Wind Speed-up Kzt factor) shall be determined on a site-specific basis in accordance with Section R301.2.1.5.
- d. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The grade of masonry units shall be determined from ASTM C34, C55, C62, C73, C90, C129, C145, C216 or C652.
- e. The City of Bellevue participates in the National Flood Insurance Program (NFIP); Regular Program (No Special Flood Hazard Area). Further NFIP participation information: March 12, 1974, entry into National Flood Insurance Program. Current maps entitled “The Flood Insurance Study (FIS) for King County, Washington, and Incorporated Areas,” dated August 19, 2020, and any revisions thereto, as amended or revised with the accompanying Flood Insurance Rate Maps (FIRMs) dated August 19, 2020, and any revisions thereto.
- f. The applicable code to regulate the use and conservation of energy is the Washington State Energy Code – Residential (WSEC-R), including [WSEC-R Section R403.7](#).

**23.12.322.1.4 International Residential Code Section R322.1.4 amended – Establishing the design flood elevation.** International Residential Code Section R322.1.4 is hereby amended to read as follows.

**Commented [SG28]:** Aligns with the FEMA National Floodplain Insurance Program and Bellevue Land Use Code.

**R322.1.4 Establishing the design flood elevation.** The design flood elevation shall be used to define flood hazard areas. At a minimum, the design flood elevation shall be one foot above the higher of the following:

1. The base flood elevation at the depth of peak elevation of flooding, including wave height, that has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year, or
2. The elevation of the design flood associated with the area designated on a flood hazard map as identified by the Federal Emergency Management Agency in an engineering report entitled “The Flood Insurance Study (FIS) for King County, Washington, and Incorporated Areas,” dated August 19, 2020, and any revisions thereto, with the accompanying Flood Insurance Rate Maps (FIRMs), dated August 19, 2020, and any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section adopted by the community, or otherwise legally designated.

**R322.1.4.1 Determination of design flood elevations.** If design flood elevations are not specified, the *building official* is authorized to require the applicant to comply with either of the following:

1. Obtain and reasonably use data available from a federal, state or other source.
2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices used and/or floodway in accordance with City of Bellevue LUC 20.25H.175A and Surface Water Engineering Standards, Section D4-05.5, “Floodplain/Floodway Analysis” in order to define special flood hazard areas. Determinations shall be undertaken by a registered *design professional* who shall document that the technical methods used reflect currently accepted engineering practice and complied with accepted hydrologic and hydraulic engineering practices in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Studies, analyses and computations shall be

submitted in sufficient detail to allow thorough review and approval.

**R322.1.4.2 Determination of impacts.** In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall [provide a floodway analysis that demonstrates that the proposed work will meet the City of Bellevue Surface Water Engineering Standards, Section D4-05.5, "Floodplain/Floodway Analysis."](#) ~~demonstrate that the effect of the proposed buildings and structures on design flood elevations, including fill, when combined with other existing and anticipated flood hazard area encroachments, will not increase the design flood elevation by more than 1 foot (305 mm) at any point within the jurisdiction.~~

**23.12.T101.1 International Residential Code Appendix T Section T101.1 amended – General.** International Residential Code Appendix T Section T101 is hereby amended to read as follows:

**Commented [SG29]:** Existing code language to identify the voluntary option to design a solar system per this Appendix.

**T101.1 General.** These provisions shall [only](#) be applicable for new construction where [the building owner voluntarily elects to construct a solar-ready installation](#) ~~provisions are required.~~

....

Section 8. Chapter 23.13 of the Bellevue City Code is hereby amended to read as follows:

**Chapter 23.13  
EXISTING BUILDING CODE**

Sections:

- 23.13.010 Amendments and adoptions.
- 23.13.302 International Existing Building Code Section 302 amended – General provisions.
- 23.13.1501.6 International Existing Building Code Table 1501.6 amended – Protection of pedestrians.
- 23.13.1501.6.1 International Existing Building Code Section 1501.6.1 amended – Walkways.

**23.13.010 Amendments and adoptions.**

The stated purpose and intent of the 2021 Edition of the *International Existing Building Code* is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to provide a reasonable level of safety, health, property protection and general welfare insofar as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings. Consistent with this purpose and intent, the following code, as amended, added to or excepted in this chapter, together with all amendments and additions provided in this title, are adopted and shall be applicable within the City of Bellevue:

A. International Existing Building Code.

1. Code Adoption. The ~~2021~~<sup>2014</sup> Edition of the *International Existing Building Code* published by the International Code Council, as adopted and amended by the State Building Code Council in Chapter 51-50 WAC, including Appendix A “Guidelines for the Seismic Retrofit of Existing Buildings,” but excluding Chapter 1, “Scope and Administration,” shall be applicable within the City, as amended, added to and excepted in this chapter. The provisions of the *International Existing Building Code* shall be applied to the repair, alteration, change of use or occupancy, addition and relocation of existing buildings.

**23.13.302 International Existing Building Code Section 302 amended – General provisions.** International Existing Building Code Section 302 is hereby amended by the addition of a new section 302.67 to read as follows:

....

**F] 302.67 Buildings exceeding 10,000 square feet.** An *automatic sprinkler system* shall be installed throughout all newly constructed buildings where the total floor area exceeds 10,000 square feet including basements. An *automatic sprinkler system* shall also be installed throughout existing buildings when an addition is made to the building and the total floor area, including the basements, of the existing building and the addition combined exceeds 10,000 square feet, or when the value of a structural alteration or repair of an existing building 10,000 square feet in area or greater exceeds 50 percent of the assessed valuation of such existing building, or exceeds 50 percent of the recognized replacement cost of the structure, without consideration of depreciation, as determined under the Marshall Valuation Service Cost Handbook, whichever is greater. For purposes of this section, portions of buildings separated by one or more *fire walls* shall not be



considered a separate building. To the extent this section conflicts with any other provision of the *International Building Code* or the *International Fire Code* adopted by the City, this section shall control.

**23.13.1501.6 International Existing Building Code Table 1501.6 amended – Protection of pedestrians.** International Existing Building Code Table 1501.6 is hereby amended to read as follows:

**Commented [SG30]:** Duplicating current building code provision to clarify required locations of pedestrian protection for existing large buildings undergoing construction modifications.

**[BS] TABLE 1501.6  
 PROTECTION OF PEDESTRIANS**

HEIGHT OF CONSTRUCTION	DISTANCE FROM CONSTRUCTION TO <u>SIDEWALK, WALKWAY, OR</u> LOT LINE	TYPE OF PROTECTION REQUIRED
8 feet or less	Less than 5 feet	Construction railings
	5 feet or more	None
More than 8 feet	Less than 5 feet	Barrier and covered walkway
	5 feet or more, but not more than one-fourth the height of construction	Barrier and covered walkway
	5 feet or more, but between one-fourth and one-half the height of construction	Barrier
	5 feet or more, but exceeding one-half the height of construction	None

**23.13.1501.6.1 International Existing Building Code Section 1501.6.1 amended – Walkways.** International Existing Building Code Section 1501.6.1 is hereby amended to read as follows:

**1501.6.1 Walkways.** A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the sidewalk to be fenced or closed. A walkway shall be provided for pedestrian travel that leads from a building entrance or exit of an occupied structure to a public way. Walkways shall be of sufficient width to accommodate the pedestrian traffic, but shall be not less than 4 feet (1219 mm) in width. Walkways shall be provided with a durable walking surface and shall be *accessible* in accordance with Chapter 11 [of the International Building Code](#). Walkways shall be designed to support all imposed loads and the design live load shall be not less than 150 pounds per square foot (psf) (7.2 kN/m<sup>2</sup>). [Where a sidewalk or walkway passes into or through, or adjacent to, an area under construction or demolition, the building official is authorized to require protection as indicated in this chapter and Table 1501.6.](#)

Section 9. Section 23.16.010 of the Bellevue City Code is hereby amended to read as follows:

**23.16.010 Barrier requirements – Specifications.** The following requirements shall apply to all outdoor swimming pools, spas and hot tubs heretofore or hereafter constructed or presently under construction within the City. Each such pool, spa, or hot tub shall be designed per the [202148 International Building Code](#) Section 3109.1 when applicable, as amended by the State of Washington, or Section 305 of the [202148 International Swimming Pool and Spa Code](#), as amended by the State of Washington, whichever shall apply to the primary use and structure with which the pool, spa, or hot tub is associated.

Commented [SG31]: Updating code references.

**Exception:** Any outdoor swimming pool, spa or hot tub which was constructed prior to adoption of the *International Building Code* or the *International Residential Code* under Chapter 23.10 BCC or Chapter 23.12 BCC need not comply with the terms of this section if such swimming pool, hot tub or spa is enclosed with a pool or yard fence which complies with the applicable Bellevue City Code provision regarding pool, spa, or hot tub enclosures which was in effect at the time the enclosure was constructed.

Section 10. Chapter 23.50 of the Bellevue City Code is hereby repealed in its entirety and replaced with a new Chapter 23.50 to read as follows:

**Chapter 23.50  
MECHANICAL CODE**

Sections:

- 23.50.010 Adoptions.
- 23.50.020 Amendments, additions, or exceptions to the 2021 International Mechanical Code.
- 23.50.401.4 International Mechanical Code Section 401.4 amended – Intake opening location.
- 23.50.405.1 International Mechanical Code Section 405.1 amended – General.
- 23.50.501.3 International Mechanical Code Section 501.3 amended – Exhaust discharge.
- 23.50.506.3.13.2 International Mechanical Code Section 506.3.13.2 amended – Termination through an exterior wall.
- 23.50.506.5.2 International Mechanical Code Section 506.5.2 amended – Pollution-control units.
- 23.50.507.2 International Mechanical Code Section 507.2 amended – Type I hoods.
- 23.50.510.7 International Mechanical Code Section 510.8 amended – Suppression required.
- 23.50.513.10 International Mechanical Code Section 513.10 amended – Equipment, inlets and outlets.
- 23.50.607.5.5 International Mechanical Code Section 607.5.5 amended – Shaft enclosures.
- 23.50.1104.4.1 International Mechanical Code Section 1104.4.1 amended – Noncommunicating spaces.

**23.50.010 Adoptions.**

The following codes, all as amended, added to or excepted in this chapter, together with all amendments and additions provided in this title, are adopted and shall be applicable within the City of Bellevue:

A. International Mechanical Code.

1. Code Adoption. The 2021 Edition of the *International Mechanical Code* published by the International Code Council, as adopted and amended by the State Building Code Council in Chapter 51-52 WAC, excluding Chapter 1, "Administration," is adopted and shall be applicable within the City, as amended, added to and excepted in this chapter.

2. Scope. This code shall regulate the design, installation, maintenance, alteration and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, equipment and appliances specifically addressed herein. The installation of fuel gas distribution piping and equipment, fuel gas-fired appliances and fuel gas-fired appliance venting systems shall be regulated by the *International Fuel Gas Code*.

**Exceptions:**

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the *International Residential Code*.

2. The standards for liquefied petroleum gas installations shall be the 2020 Edition of NFPA 58 (*Liquefied Petroleum Gas Code*) and the 2021 Edition of NFPA 54 (ANSI Z223.12006 *National Fuel Gas Code*).

B. National Fuel Gas Code (NFPA 54, ANSI Z223.1). The 2021 Edition of the *National Fuel Gas Code* published by the National Fire Protection Association, as amended by the State Building Code Council in Chapter 51-52 WAC, is adopted and shall be applicable within the City, as amended, added to and excepted in this chapter.

C. Liquefied Petroleum Gas Code (NFPA 58). The 2020 Edition of the *Liquefied Petroleum Gas Code* published by the National Fire Protection Association, as amended by the State Building Code Council in Chapter 51-52 WAC, is adopted and shall be applicable within the City, as amended, added to and excepted in this chapter.

D. International Fuel Gas Code. The 2021 Edition of the *International Fuel Gas Code* published by the International Code Council, as amended by the State Building Code Council in Chapter 51-52 WAC, excluding Chapter 1, "Administration," is adopted and shall be applicable within the City, as amended, added to and excepted in this chapter.

**23.50.020 Amendments, additions, or exceptions to the 2021 International Mechanical Code.** Pursuant to RCW 19.27.060, the following contains amendments, additions, or exceptions to the *International Mechanical Code* applicable and enforceable within the City.

**23.50.401.4 International Mechanical Code Section 401.4 amended – Intake opening location.** International Mechanical Code Section 401.4 is hereby amended to read as follows:

**401.4 Intake opening location.** Air intake openings shall comply with all of the following:

1. Intake openings shall be located a minimum of 10 feet (3048 mm) from lot lines or buildings on the same lot.
2. Mechanical and gravity outdoor air intake openings shall be located not less than 10 feet (3048 mm) horizontally from any hazardous or noxious contaminant source, such as vents, streets, alleys, parking lots and loading docks, except as specified in Item 3 or Section 501.3.1. Outdoor air intake openings shall be permitted to be located less than 10 feet (3048 mm) horizontally from streets, alleys, parking garage entries, parking lots and loading docks provided that the openings are located not less than 25 feet (7620 mm) vertically above such locations. Where openings front on a street or public way, the distance shall be measured from the closest edge of the street or public way.

**Exceptions:**

1. Intake air openings providing less than 500 cfm of outdoor air to Group R occupancies are permitted to be located less than 10 feet (3048 mm) horizontally from parking lots provided that the openings are not less than 15 feet (4572 mm) vertically above the parking lot.
2. Intake air openings providing less than 500 cfm of outdoor air to Group R occupancies are permitted to be located less than 10 feet (3048 mm) horizontally from parking lots provided that the openings are not less than 15 feet (4572 mm) vertically above the clear height for vehicles in the parking garage.

3) For existing buildings, the building official may approve heights less than 25 feet (7620 mm) with alternative designs that account for factors such as distance from lane of vehicle travel, prevailing wind, filtering of intake air, or other elements of the design or the site conditions that affect the adjacent exterior air quality.

**Commented [SG32]:** This additional exception allows more flexibility for existing buildings.

3. Intake openings shall be located not less than 3 feet (914 mm) below contaminant sources where such sources are located within 10 feet (3048 mm) of the opening. Separation is not required between intake openings and living space *exhaust air* openings of an individual *dwelling unit* or *sleeping unit* where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions.

4. Intake openings on structures in flood hazard areas shall be at or above the elevation required by Section 1612 of the *International Building Code* for utilities and attendant equipment.

**23.50.405.1 International Mechanical Code Section 405.1 amended – General.** International Mechanical Code Section 405.1 is hereby amended to read as follows:

**Commented [SG33]:** Cross-referencing WA State Energy Code.

**405.1 General.** Mechanical ventilation systems shall be provided with manual or automatic controls that will operate such systems whenever the spaces are occupied. Air-conditioning systems that supply required ventilation air shall be provided with controls designed to automatically maintain the required outdoor air supply rate during occupancy. [For additional mechanical system control requirements, refer to the 2021 International Energy Conservation Code Section C403.4, HVAC System Controls, as amended by the State of Washington.](#)

**23.50.501.3 International Mechanical Code Section 501.3 amended – Exhaust discharge.** International Mechanical Code Section 501.3 is hereby amended to read as follows:

**Commented [SG34]:** Updating exception that provides flexibility for constrained urban conditions and referencing related provisions in the Land Use Code.

**501.3 Exhaust discharge.** The air removed by every mechanical exhaust system shall be discharged outdoors at a point where it will not cause a public nuisance and not less than the distances specified in Section 501.3.1. The air shall be discharged to a location from which it cannot again be readily drawn in by a ventilating system. Air shall not be exhausted into an attic or crawlspace, or be directed onto walkways.

**EXCEPTIONS:**

1. Whole-house ventilation-type attic fans shall be permitted to discharge into the attic space of dwelling units having private attics.

2. Commercial cooking recirculating systems.

3. Where installed in accordance with the manufacturer's instructions and where mechanical or natural ventilation is otherwise provided in accordance with Chapter 4, listed and labeled domestic ductless range hoods shall not be required to discharge to the outdoors.

4. In the Downtown, as defined in Bellevue City Code 20.50.016 (Land Use Code), mechanical exhaust system discharge may be directed onto walkways if the discharge is located no less than 16 feet above the walkway per Bellevue City Code 20.25A.130.D (Land Use Code) or if a reduced height is approved by the Land Use Director taking into consideration factors such as height above walkway, story height of building, horizontal distance from walkway, filtering of exhaust air, or other elements of the design or the site conditions that affect the exhaust air quality and the walkway environment.

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**23.50.506.3.13.2 International Mechanical Code Section 506.3.13.2 amended - Termination through an exterior wall.** International Mechanical Code Section 506.3.13.2 is hereby amended to read as follows:

**506.3.13.2 Termination through an exterior wall.** Exhaust outlets shall be permitted to terminate through exterior walls where the smoke, grease, gases, vapors and odors in the discharge from such terminations do not create a public nuisance or a fire hazard. Such terminations shall not be located where protected openings are required by the *International Building Code*. Such terminations shall be located in accordance with Section 506.3.13.3 and shall not be located within 3 feet (914 mm) of any opening in the exterior wall. An opening includes any window (fixed or openable), door, air exhaust or intake opening.

**23.50.506.5.2 International Mechanical Code Section 506.5.2 amended – Pollution-control units.** International Mechanical Code Section 506.5.2 is hereby amended to read as follows:

**Commented [SG35]:** Existing exception that provides flexibility for constrained urban conditions.

**Commented [SG36]:** Updated reference and clarification.

**Commented [SG37]:** Clarifying duct requirements for pollution control units.

**506.5.2 Pollution-control units.** The installation of pollution-control units shall be in accordance with the manufacturer's installation instructions and all the following:

1) Pollution-control units shall be *listed* and *labeled* in accordance with UL [87821978](#).

Commented [SG38]: 2021 IMC language change

2) Fans serving pollution-control units shall be *listed* and *labeled* in accordance with UL 762.

3) [Bracing and supports for pollution-control units shall be of noncombustible material securely attached to the structure and designed to carry gravity and seismic loads within the stress limitations of the International Building Code. Pollution-control units shall be mounted and secured in accordance with the manufacturer's installation instructions and the International Building Code.](#)

Commented [SG39]: 2021 IMC language change

4) Pollution-control units located indoors shall be listed and labeled for such use. Where enclosed duct systems, as required by Section 506.3.11, are connected to a pollution-control unit, such unit shall be [listed and labeled, in accordance with UL 2221 or ASTM E2336, for location in an enclosure located in a room or space](#) having the same fire-resistance rating as the duct enclosure. Access shall be provided for servicing and cleaning of the unit. The space or enclosure shall be ventilated in accordance with the manufacturer's installation instructions.

Commented [SG40]: 2021 IMC language change

5) [Clearances shall be maintained between the pollution-control unit and combustible material in accordance with the listing. A clearance of not less than 18 inches \(457 mm\) shall be maintained between the pollution-control unit and combustible material.](#)

Commented [SG41]: 2021 IMC language change

6) Roof mounted pollution-control units shall be listed for outdoor installation and shall not be mounted not less than 18 inches (457 mm) above the roof.

7) Exhaust outlets for pollution-control units shall be in accordance with Section 506.3.13.

8) An airflow differential pressure control shall be provided to monitor the pressure drop across the filter sections of a pollution-control unit. When the airflow is reduced below the design velocity, the airflow differential pressure control shall activate a visual alarm located in the area where cooking operations occur.



- 9) Pollution-control units shall be provided with a factory-installed fire suppression system.
- 10) Service space and replacement requirements shall be provided in accordance with the manufacturer's instructions for the pollution control unit and Section 306.
- 11) Wash-down drains shall discharge through a grease interceptor and shall be sized for the flow. Drains shall be sealed with a trap or other approved means to prevent air bypass. Where a trap is utilized it shall have a seal depth that accounts for the system pressurization and evaporation between cleanings.
- 12) Protection from freezing shall be provided for the water supply and fire protection systems where such systems are subject to freezing.
- 13) Duct connections to pollution-control units shall be in accordance with Section 506.3.2.3. Where water splash or carryover can occur in the transition duct as a result of a washing operation, the transition duct shall slope downward toward the cabinet drain pan for a length not less than 18 inches (457 mm). Ducts shall transition to the full size of the unit's inlet and outlet openings.
- 14) Extra-heavy-duty appliance exhaust systems shall not be connected to pollution-control units except where such units are specifically designed and listed for use with solid fuels.
- 15) Pollution-control units shall be maintained in accordance with the manufacturer's instructions.

16) Both the upstream and downstream grease duct connected to the pollution-control unit shall be in accordance with Section 506.

**23.50.507.2 International Mechanical Code Section 507.2 amended – Type I hoods.** International Mechanical Code Section 507.2 is hereby amended to read as follows:

**Commented [SG42]:** Amending to align with and cross-reference building code requirements for exhaust hoods.

**507.2 Type I hoods.** Type I hoods shall be installed where cooking *appliances* produce grease or smoke as a result of the cooking process. Type I hoods shall be installed over *medium-duty, heavy-duty* and *extra-heavy-duty cooking appliances*.

**Exceptions:**

1) A Type 1 hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m<sup>3</sup> or less of grease when tested at an exhaust flow rate of 500cfm (0.236 m<sup>3</sup>/s) in accordance with UL 710B.

2) A Type 1 hood shall not be required in an R-2 type occupancy with no more than 16 residents.

[3\) A Type 1 hood shall not be required per IBC 904.14.](#)

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**23.50.510.7 International Mechanical Code Section 510.7 amended – Suppression required.** International Mechanical Code Section 510.7 is hereby amended to read as follows:

Commented [SG43]: Clarifying dimensional requirement.

**23.50.510.7 Suppression required.** Duct shall be protected with an *approved* automatic fire suppression system installed in accordance with the *International Building Code*.

**Exceptions:**

- 1) An approved automatic fire suppression system shall not be required in ducts conveying materials, fumes, mists and vapors that are nonflammable and noncombustible under all conditions and at any concentrations.
- 2) Automatic fire suppression systems shall not be required in metallic and noncombustible, nonmetallic exhaust ducts in semiconductor fabrication facilities.
- 3) An approved automatic fire suppression system shall not be required in ducts where the largest cross-sectional diameter [or width](#) of the duct is less than 10 inches (254 mm).
- 4) For laboratories, as defined in Section 510.1, automatic fire protection systems shall not be required in laboratory hoods or exhaust systems

**23.50.513.10.3 International Mechanical Code Section 513.10.3 amended – Equipment, inlets and outlets.** International Mechanical Code Section 513.10.3 is hereby amended to read as follows:

**Commented [SG44]:** Existing language to ensure safe air intake.

**[F] 513.10.3 Equipment, inlets and outlets.** *Equipment* shall be located so as to not expose uninvolved portions of the building to an additional fire hazard. Outdoor air inlets shall be located so as to minimize the potential for introducing smoke or flame into the building. Exhaust outlets shall be so located as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard. In addition, supply air shall be taken directly from an outside, uncontaminated source located a minimum distance of 20 feet (6096 mm) from any air exhaust system or outlet.

**23.50.607.5.5 International Mechanical Code Section 607.5.5 amended – Shaft enclosures.** International Mechanical Code Section 607.5.5 is hereby amended to read as follows:

**Commented [SG45]:** Existing language to ensure safe air intake.

**[BF] 607.5.5 Shaft enclosures.** Shaft enclosures that are permitted to be penetrated by ducts and transfer openings shall be protected with listed fire and smoke dampers installed in accordance with their listing.

**Exceptions:**

1. Fire dampers are not required at penetrations of shafts where any of the following apply:
  - 1.1. Steel exhaust subducts having a wall thickness of not less than 0.0187 inch (0.4712 mm) extend not less than 22 inches (559 mm) vertically in exhaust shafts and an exhaust fan is installed at the upper terminus of the shaft that is powered continuously, in accordance with Section 909.11 of the *International Building Code*, so as to maintain a continuous airflow upward to the outdoors.
  - 1.2. Penetrations are tested in accordance with ASTM E119 or UL 263 as part of the fire-resistance-rated assembly.
  - 1.3. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 of the *International Building Code*, and where the fire damper

will interfere with the operation of the smoke control system.

1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.

2. In Group B and R occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the *International Building Code*, smoke dampers are not required at penetrations of shafts where kitchen, clothes dryer, bathroom, ~~and toilet room, trash room, and janitor's closet~~ exhaust openings with steel exhaust subducts, having a wall thickness of not less than 0.0187 inch (0.4712 mm), extend not less than 22 inches (559 mm) vertically and the exhaust fan at the upper terminus is powered continuously in accordance with the provisions of Section 909.11 of the *International Building Code*, and maintains airflow upward to the outdoors.

3. Smoke dampers are not required at penetrations of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.

4. Smoke dampers are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 of the *International Building Code* and where the smoke damper will interfere with the operation of the smoke control system.

5. Fire dampers and combination fire/smoke dampers are not required in kitchen and clothes dryer exhaust systems where dampers are prohibited by this code.

**[BF] 607.5.5.1 Continuous upward flow.**

Fire dampers and smoke dampers shall not be installed in shafts that are required to maintain continuous airflow upward where closure of the damper would result in the loss of airflow.

**[BF] 607.5.5.2 Enclosure at the bottom.**

Shaft enclosures that do not extend to the bottom of the building or structure shall be protected in accordance with Section 713.11 of the *International Building Code*.

**23.50.1104.4.1 International Mechanical Code Section 1104.4.1 amended- Noncommunicating spaces.** International Mechanical Code Section 1104.4.1 is hereby amended to read as follows:

**Commented [SG46]:** Defining size of opening that constitutes communication between spaces.

**1104.4.1 Noncommunicating spaces.** Where the refrigerant-containing parts of a system are located in one or more spaces that do not communicate through permanent openings with a minimum size of 100 square inches (645 sq. cm), or HVAC ducts, the volume of the smallest, enclosed occupied space shall be used to determine the permissible quantity of refrigerant in the system.

Section 11. Chapter 23.60 of the Bellevue City Code is hereby amended to read as follows:

### Chapter 23.60 PLUMBING CODE

Sections:

- 23.60.010 [Adoptions Uniform Plumbing Code.](#)
- 23.60.020 Scope.
- 23.60.030 Amendments, additions, or exceptions to the 202118 Uniform Plumbing Code.
- 23.60.1101.12.2.2.2 Uniform Plumbing Code Section 1101.12.2.2.2 amended – Combined system.

#### **23.60.010 Uniform Plumbing Code.**

The 202118 Edition of the *Uniform Plumbing Code* published by the International Association of Plumbing and Mechanical Officials, as adopted and amended by the State Building Code Council in Chapters 51-56 WAC, excluding Chapter 1, Chapter 12, and Chapter 14, is adopted, together with Appendix A, Appendix B, and Appendix C “Alternate Plumbing Systems” excluding Sections C 304.0 through C 601.9; and excluding “Lawn Sprinkler Heads” from Table 610.3 and Table 610.4; and including Appendix I, and shall be applicable within the City, as amended, added to and excepted in this chapter.

**Commented [SG47]:** Updating code references.

#### **23.60.020 Scope.**

The provisions of the [202118 Uniform Plumbing Code](#) shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system. Where there is a conflict between the *Uniform Plumbing Code* and Bellevue City Code Title 24 (Utilities Codes) or utilities engineering standards related to water, sewer or storm drain improvements located more than 24 inches outside a building, the city of Bellevue utilities codes and standards shall prevail.

**23.60.030 Amendments, additions, or exceptions to the [202118 Uniform Plumbing Code](#).** Pursuant to RCW 19.27.060, the following contains amendments, additions, or exceptions to the *Uniform Plumbing Code* are applicable and enforceable within the city.

**23.60.1101.12.2.2.2 Uniform Plumbing Code Section 1101.12.2.2.2 amended – Combined system.** Uniform Plumbing Code Section 1101.12.2.2.2 is hereby amended to read as follows:

**1101.12.2.2.2 Combined System.** The secondary roof drains shall connect to the vertical piping of the primary storm drainage conductor downstream of the last horizontal offset located below the roof. The primary storm drainage system shall connect to the building storm water that connects to an underground public storm sewer. The combined secondary and primary roof drain systems shall be sized in accordance with Section 1103.0 based on double the rainfall rate for the local area. A relief drain shall be connected to the vertical drain piping, within 20 feet of grade, using a wye-type fitting piped to daylight on the exterior of the building. The piping shall be sized as required for a secondary drain with a 4 inch maximum.

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Section 12. Severability. If any section, subsection, paragraph, sentence, clause, or phrase of this Ordinance is declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining parts of this Ordinance.

Section 13. This Ordinance shall take effect and be in force on \_\_\_\_\_, 2023.

\_\_\_\_-ORD  
\_\_/\_\_/2023

Passed by the City Council this \_\_\_\_ day of \_\_\_\_\_, 2023  
and signed in authentication of its passage this \_\_\_\_ day of \_\_\_\_\_,  
2023.

(SEAL)

\_\_\_\_\_  
Lynne Robinson, Mayor

Approved as to form:

Kathy Gerla, City Attorney

\_\_\_\_\_  
Matt McFarland, Assistant City Attorney

Attest:

\_\_\_\_\_  
Charmaine Arredondo, City Clerk

Published: