1.0001 - Parties of Record - International Code Project (I-Codes) Plumbing-Mech-Energy

No.	Name	Organization	Email Address	Street Address	City	State	Zip Code	Notes
1	Staff	Snohomish County Planning & Development Services						
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WASHINGTON STATE BUILDING CODE

CHAPTER 51-52
2018 Edition

INTERNATIONAL MECHANICAL CODE

Includes adoption of and amendments to the 2018 International Fuel Gas Code

And adoption of the 2018 National Fuel Gas Code (NFPA 54) and the 2017 Liquefied Petroleum Gas Code (NFPA 58)

Washington State Building Code Council

Effective July 1, 2020

Copies of the State Building Codes and
complete copies of the 2018 Model Codes
may be obtained from:

Washington Association of Building Officials
Post Office Box 7310
Olympia, Washington 98507-7310
(360) 628-8669 www.wabobookstore.org
or toll free in Washington State at (888) 664-9515

International Mechanical Code

Chapter 51-52 WAC
Effective July 1, 2020
First Printing March 2020

First Edition based on
WSR 20-03-041

Preface

Authority: The International Mechanical Code (Chapter 51-52 WAC) is adopted by the Washington State Building Code Council pursuant to Chapters 19.27 and 70.92 RCW. This code was first adopted by reference by the Washington State Legislature in 1974. In 1985, the Legislature delegated the responsibility of adoption and amendment of these codes to the State Building Code Council.

Supersession of Previous Codes: Chapter 51-52 WAC supersede Chapter 51-42 WAC.

Code Precedence: The State Building Code Act, Chapter 19.27 RCW, establishes the following order of precedence among the documents adopted as parts of the State Building Code:

International Building Code, Standards and amendments – WAC 51-50;
International Residential Code, Standards and amendments – WAC 51-51;
International Mechanical Code, Standards and amendments – WAC 51-52;
International Fire Code, Standards and amendments – WAC 51-54A;
Uniform Plumbing Code, Standards and amendments – WAC 51-56.

Where there is a conflict between codes, an earlier named code takes precedence over a later named code. In the case of conflict between the duct insulation requirements of the International Mechanical Code and the duct insulation requirements of the Energy Code, the Energy Code, or where applicable, a local jurisdiction's energy code, shall govern.

Where, in any specific case, different sections of this Code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

Organization and Numbering: These rules are written to allow compatible use with the International Mechanical Code. All sections which are amended, deleted, or added are referenced.

Enforcement: The State Building Code Act requires that each local jurisdiction enforce the State Building Code within its jurisdiction. Any jurisdiction can contract with another jurisdiction or an inspection agency to provide the mandated enforcement activities.

Amendments to the State Building Code:

The State Building Code Council has adopted review procedures and approval criteria for local amendments. These procedures and criteria are found in Chapter 51-04 WAC. The Council has exempted from its review any amendments to the administrative provisions of the various codes.

Forms for proposing statewide amendments to the State Building Code are available from the State Building Code Council staff.

A. **Amendments of Statewide Application**: On a yearly basis the State Building Code Council will consider proposals to amend the State Building Code. The Council is not scheduled to enter formal rulemaking until 2021 as part of its consideration of adoption of the 2021 series of codes.

   Proposals to amend the State Building Code shall be made on forms provided by the Building Code Council.

B. **Local Amendments**: Any jurisdiction may amend the State Building Code provided the amendments do not reduce the minimum performance standards of the codes. There are two areas where local amendments are limited or prohibited:

   Prohibited Amendments: Residential provisions of the State Energy Code (WAC 51-11R and WAC 51-11C); any provision of the International Building Code or International Residential Code affecting accessibility; and standards specifically adopted in Chapters 19.27 and 19.27A WAC cannot be amended by any local jurisdiction.

I-Codes: Plumbing-Mech-Energy
Index # - File Name: 1.0002_2018_ IMC-state-amendments-_inserts_2ndpr.pdf

Residential Amendments: Amendments by local jurisdictions which affect the construction of single family and multi-family residential buildings must be reviewed and approved by the State Building Code Council before such amendments can be enforced. The State Building Code Act provides the following definition:

Multi-family residential building: means common wall residential buildings that consist of four or fewer units, that do not exceed two stories in height, that are less than 5,000 square feet in area, and that have a one-hour fire-resistive occupancy separation between units.

Application forms for Council review of local amendments are available from the State Building Code Council Staff.

Washington State Building Code Council
Post Office Box 41449
Olympia, Washington 98504-1449
www.sbcc.wa.gov
(360) 407-9255
e-mail: sbcc@des.wa.gov

Printing Format: This version of the rules is published as a series of insert or replacement pages and is intended to be printed as a two-sided document. Each page provides instructions for installing them in the model code book. Amendments to the model code, are indicated by a double line (‖) in the margin next to the revised portions. Any portion of the model code that has been deleted in the amendment will be will be marked with (**<**) symbol

Effective Date: These rules were adopted by the State Building Code Council on November 8, 2019. The rules are effective throughout the state on July 1, 2020. This code is based on WAC 51-56 as published in WSR 16-02-044. It is subject to review by the State Legislature during the 2020 session.)

Building Permit Fees: The activities of the State Building Code Council are supported by permit fees collected by each city and county. Section 19.27.085 of the State Building Code Act requires that a fee of $6.50 be imposed on each residential permit and $25.00 on each commercial building permit issued by each city and county. In addition, a fee of $2.00 per unit shall be imposed for each dwelling unit after the first unit, on each building containing more than one residential unit. For the purpose of this fee, WAC 365-110-035 defines building permits as any permit to construct, enlarge, alter, repair, move, improve, remove, convert or demolish any building or structure regulated by the Building Code. Exempt from the fee are plumbing, electrical, mechanical permits, permits issued to install a mobile/manufactured home, commercial coach or factory built structure, or permits issued pursuant to the International Fire Code.

Each city and county shall remit moneys collected to the state treasury quarterly. No remittance is required until a minimum of $50.00 has accumulated.

These permit fees are the amounts current in January 2020. Such fees may be changed by the State Legislature.

Opinions: RCW 19.27.031 grants the council authority to render opinions relating to the building code at the request of a local code official. For the purposes of this section, the term "code official" means the local or state official, or their designee, responsible for implementation and enforcement of the specific code provision on which the opinion is requested.

At the request of a code official, the council will issue opinions relating to the codes adopted under chapters 19.27, 19.27A, and 70.92 RCW, and council amendments to the model codes. At the request of a local code official, the council may issue opinions on the applicability of WAC 51-04-030 to a local government ordinance regulating construction. Council related opinions may be developed and approved by a standing committee of the council. Opinions approved by a standing committee may be reviewed and modified by the council.

WASHINGTON STATE AMENDMENTS
INTERNATIONAL MECHANICAL CODE

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CHAPTER 51-52 WAC
STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2015 EDITION OF THE INTERNATIONAL MECHANICAL CODE

WAC 51-52-001 AUTHORITY

These rules are adopted under the authority of Chapter 19.27 RCW.

WAC 51-52-002 PURPOSE

The purpose of these rules is to implement the provisions of Chapter 19.27 RCW, which provides that the State Building Code Council shall maintain the State Building Code in a status which is consistent with the purpose as set forth in RCW 19.27.020. In maintaining the codes the Council shall regularly review updated versions of the codes adopted under the act, and other pertinent information, and shall amend the codes as deemed appropriate by the Council.

WAC 51-52-003 INTERNATIONAL MECHANICAL CODE

The 2018 edition of the International Mechanical Code published by the International Code Council is hereby adopted by reference with the exceptions noted in this Chapter of the Washington Administrative Code.

WAC 51-52-004 CONFLICT BETWEEN INTERNATIONAL MECHANICAL CODE AND STATE ENERGY CODE CHAPTER 51-11 WAC

In the case of conflict between the duct sealing or insulation requirements of Section 603 or Section 604 of this code and the duct sealing or insulation requirements of Chapter 51-11C/R WAC, the Washington State Energy Code, or where applicable, a local jurisdiction's energy code, the provisions of such energy codes shall govern.

WAC 51-52-007 EXCEPTIONS

The exceptions and amendments to the International Mechanical Code contained in the provisions of Chapter 19.27 RCW shall apply in case of conflict with any of the provisions of these rules.

The provisions of this code do not apply to temporary growing structures used solely for the commercial production of horticultural plants including ornamental plants, flowers, vegetables, and fruits. “Temporary growing structure” means a structure that has the sides and roof covered with polyethylene, polyvinyl, or similar flexible synthetic material and is used to provide plants with either frost protection or increased heat retention. A temporary growing structure is not considered a building for purposes of this code.

Codes referenced which are not adopted through RCW 19.27.031 or RCW 19.27A shall not apply unless specifically adopted by the authority having jurisdiction.

WAC 51-52-008 IMPLEMENTATION

The International Mechanical Code adopted by Chapter 51-52 WAC shall become effective in all counties and cities of this state on July 1, 2020.

101.2 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.* References in this code to Group R shall include Group I-1, Condition 2 assisted living facilities licensed by Washington state under chapter 388-78A WAC and Group I-1, Condition 2 residential treatment facilities licensed by Washington state under chapter 246-337 WAC.

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 2014 Edition of NFPA 58 (Liquefied Petroleum Gas Code) and the 2015 Edition of ANSI Z223.1/NFPA 54 (National Fuel Gas Code).

(Insert Facing Page 1)

BALANCED WHOLE HOUSE VENTILATION. Any combination of concurrently operating residential unit mechanical exhaust and mechanical supply whereby the total mechanical exhaust airflow rate is within 10 percent or 5 cfm, whichever is greater, of the total mechanical supply airflow rate. Intermittent dryer exhaust, intermittent range hood exhaust, and intermittent toilet room exhaust airflow rates above the residential dwelling or sleeping unit minimum ventilation rate are exempt from the balanced airflow calculation.

(Insert Facing Page 10)

DISTRIBUTED WHOLE HOUSE VENTILATION. A whole house ventilation system shall be considered distributed when it supplies outdoor air directly (not transfer air) to each dwelling or sleeping unit habitable space, (living room, den, office, interior adjoining spaces or bedroom), and exhausts air from all kitchens and bathrooms directly outside.

(Insert Facing Page 12)

LOCAL EXHAUST. An exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a residential dwelling or sleeping unit.

(Insert Facing Page 15)

PERMANENT CONSTRUCTION. Construction that, if removed, would disturb the structural integrity of the building or the fire-resistance rating of a building assembly.

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RELIEF AIR. Exhausted return air from a system that provides ventilation for human usage.

REPLACEMENT AIR. Outdoor air that is used to replace air removed from a building through an exhaust system. Replacement air may be derived from one or more of the following: Makeup air, supply air, transfer air, and infiltration. However, the ultimate source of all replacement air is outdoor air. When replacement air exceeds exhaust, the result is exfiltration.

(Insert Facing Page 18)

WHOLE HOUSE VENTILATION SYSTEM. A mechanical ventilation system, including fans, controls, and ducts, which replaces, by direct means, air from the habitable rooms with outdoor air.

VENTILATION ZONE. Any indoor area that requires ventilation and comprises one or more spaces with the same occupancy category (see Table 403.3.1.1), occupant density, zone air distribution effectiveness (see Section 403.3.1.1.1.2), and design zone primary airflow per unit area.

(Insert Facing Page 19)

306.5 Equipment and appliances on roofs or elevated structures. Where equipment requiring access or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm), an interior or exterior means of access shall be provided. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) in height or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33 percent slope). Such access shall not require the use of portable ladders. Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall.

Permanent ladders installed to provide the required access shall comply with the following minimum design criteria:

1. The side railing shall extend above the parapet or roof edge not less than 42 inches (1067 mm).
2. Ladders shall have rung spacing not to exceed 12 inches (305 mm) on center. The uppermost rung shall be a maximum of 24 inches below the upper edge of the roof hatch, roof or parapet, as applicable.
3. Ladders shall have a toe spacing not less than 7 inches (178 mm) deep.
4. There shall be a minimum of 18 inches (457 mm) between rails.
5. Rungs shall have a minimum 0.75-inch (19 mm) diameter and be capable of withstanding a 300-pound (136.1 kg) load.
6. Ladders over 30 feet (9144 mm) in height shall be provided with offset sections and landings capable of withstanding 100 pounds (488.2 kg/m^2) per square foot. Landing dimensions shall be not less than 18 inches (457 mm) and not less than the width of the ladder served. A guard rail shall be provided on all open sides of the landing. Landing dimensions shall be not less than 18 inches and not less than the width of the ladder served. A guardrail shall be provided on all open sides of the landing.
7. Climbing clearances. The distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be a minimum of 30 inches measured perpendicular to the rungs. This distance shall be maintained from the point of ladder access to the bottom of the roof hatch. A minimum clear width of 15 inches shall be provided on both sides of the ladder measured from the midpoint of and parallel with the rungs except where cages or wells are installed.
8. Landing required. The ladder shall be provided with a clear and unobstructed bottom landing area having a minimum dimension of 30 inches by 30 inches centered in front of the ladder.
9. Ladders shall be protected against corrosion by approved means.
10. Access to ladders shall be provided at all times.

Catwalks installed to provide the required access shall be not less than 24 inches (610 mm) wide and shall have railings as required for service platforms.

Exception: This section shall not apply to Group R-3 occupancies.

(Insert Facing Page 26)

306.6 Appliances above ceilings. Appliances that are located above the ceiling shall have *ready access* for inspection, service and repair without removing *permanent construction*. Appliances shall be provided with access to panel or removable ceiling tile with minimum nominal dimensions of 24 inches by 24 inches (609 mm x 609 mm).

The appliance is not required to be removable or replaceable through the access panel or removable ceiling tile. The appliance may be removed or replaced by removing the ceiling or wall assemblies adjacent to the appliance as long as they are not *permanent construction*.

Exceptions:

1. This section shall not apply to replacement appliances installed in existing compartments and alcoves where the working space clearances are in accordance with the equipment or appliance manufacturer's installation instructions.
2. A smaller access panel or removable ceiling tile shall be permitted when allowed by the equipment or appliance manufacturer's installation instructions.

307.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 307.2.1, where damage to any building components could occur as a result of overflow from the *equipment* primary condensate removal system, one of the following auxiliary protection methods shall be provided for each cooling coil or fuel-fired *appliance* that produces condensate:

1. An auxiliary drain pan with a separate drain shall be provided under the coils on which condensation will occur. The auxiliary pan drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The pan shall have a minimum depth of 1 1/2 inches (38 mm), shall not be less than 3 inches (76 mm) larger than the unit or the coil dimensions in width and length and shall be constructed of corrosion-resistant material. Galvanized sheet steel pans shall have a minimum thickness of not less than 0.0236 inch (0.6010 mm) (No. 24 gage). Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm).
2. A separate overflow drain line shall be connected to the drain pan provided with the *equipment*. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection.
3. An auxiliary drain pan without a separate drain line shall be provided under the coils on which condensate will occur. Such pan shall be equipped with a water-level detection device conforming to UL 508 that will shut off the *equipment* served prior to overflow of the pan. The auxiliary drain pan shall be constructed in accordance with Item 1 of this section.
4. A water-level detection device conforming to UL 508 shall be provided that will shut off the *equipment* served in the event that the primary drain is blocked. The device shall be installed in the primary drain line, the overflow drain line, or in the equipment-supplied drain pan, located at a point higher than the primary drain line connection and below the overflow rim of such pan.

Exceptions:

1. Fuel-fired appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.
2. Unducted fan coil units where there is no factory option available for water-level detection devices and which are installed directly within the occupied space.

(Insert Facing Page 27)

307.2.4.1 Ductless mini-split sytem traps. Ductless mini-split equipment that produces condensate shall be provided with an inline check valve located in the drain line, a trap, or other means of condensate drainage in accordance with the manufacturer's instructions.

(Insert Facing Page 28)

401.2 Ventilation required. Every occupied space other than enclosed parking garages and buildings used for repair of automobiles shall be ventilated in accordance with Section 401.2.1, 401.2.2 or 401.2.3. Enclosed parking garages and buildings used for the repair of automobiles shall be ventilated by mechanical means in accordance with Sections 403 and 404.

401.2.1 Group R occupancies. Ventilation in Group R occupancies shall be provided in accordance with Section 403.4.

401.2.2 Ambulatory care facilities and Group I-2 occupancies. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.

401.2.3 All other occupancies. Ventilation in all other occupancies shall be provided by natural means in accordance with Section 402 or by mechanical means in accordance with Sections 403.1 to 403.7.

401.3 When required. Group R occupancies shall be vented continuously or intermittently in accordance with Section 403.4. Ventilation in all other occupancies shall be provided during the periods that the room or space is occupied.

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

1. Intake openings shall be located not less than 10 feet (3048 mm) from lot lines or buildings on the same lot. Lot lines shall not be defined as a separation from a street or public way.
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 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.
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.

   Exception: Separation is not required between intake air openings and living space environmental air exhaust air openings of an individual dwelling unit or sleeping unit where a factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions. A minimum of 3 feet (914 mm) separation shall be maintained between other environmental air exhaust outlets and other dwelling or sleeping unit factory-built intake/exhaust combination termination fittings.
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 equipement.

Exception: Enclosed parking garage and repair garage ventilation air intakes are permitted to be located less than 10 feet horizontally from or 25 feet vertically above a street, alley, parking lot or loading dock.

401.7 Testing and balancing. At the discretion of the building official, flow testing may be required to verify that the mechanical system(s) satisfies the requirements of this chapter. Flow testing may be performed using flow hood measuring at the intake or exhaust points of the system, in-line pitot tube, or pitot-transverse type measurement systems in the duct, short term tracer gas measurements, or other means approved by the building official.

(Insert Facing Page 31)

403.1 Ventilation system. Mechanical ventilation shall be provided by a method of supply air and return or exhaust air. The amount of supply air shall be approximately equal to the amount of return and exhaust air. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with Chapter 6.

403.2 Outdoor air required. The minimum outdoor airflow rate shall be determined in accordance with Section 403.3.

Exceptions:

1. Where the registered design professional demonstrates that an engineered ventilation system design will prevent the maximum concentration of contaminants from exceeding that obtainable by the rate of outdoor air ventilation determined in accordance with Section 403.3, the minimum required rate of outdoor air shall be reduced in accordance with such engineered system design.
2. Alternate systems designed in accordance with ASHRAE Standard 62.1 Section 6.2, Ventilation Rate Procedure, shall be permitted.

403.2.1 Recirculation of air. The air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:

1. Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.
2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces where 10 percent or more of the resulting supply airstream consists of air recirculated from these spaces.
3. Where mechanical exhaust is required by Note b in Table 403.3.1.1, recirculation of air from such spaces shall be prohibited. All air supplied to such spaces shall be exhausted, including any air in excess of that required by Table 403.3.1.1.
4. Where mechanical exhaust is required by Note g in Table 403.3.1.1, mechanical exhaust is required and recirculation from such spaces is prohibited where more than 10 percent of the resulting supply airstream consists of air recirculated from these spaces. Return air from such spaces shall only be permitted to be recirculated when returned to an energy recovery ventilation system complying with Section 514. Recirculation of air that is contained completely within such spaces shall not be prohibited.

403.3 Outdoor air and local exhaust airflow rates. Group R occupancies shall be provided with outdoor air and local exhaust in accordance with Section 403.4. All other buildings intended to be occupied shall be provided with outdoor air and local exhaust in accordance with Section 403.3.1.

403.3.1.1 Outdoor airflow rate. Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with this section. In each occupiable space, the ventilation system shall be designed to deliver the required rate of outdoor airflow to the breathing zone. Outdoor air shall be supplied directly to each occupiable space from an air handling unit through a fully ducted path or ducted to within 12 inches of the return air opeing of a fan-powered terminal unit used to transfer the outdoor air to the occupiable space. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3.1.1. Ventilation rates for occupancies not represented in Table 403.3.1.1 shall be those for a listed occupancy classification that is most similar in terms of occupant density, activities and building construction; or shall be determined by an approved engineering analysis. The ventilation system, including transfer fan-powered terminal units, shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.

With the exception of smoking lounges, the ventilation rates in Table 403.3.1.1 are based on the absence of smoking in occupiable spaces. Where smoking is anticipated in a space other than a smoking lounge, the ventilation system serving the space shall be designed to provide ventilation over and above that required by Table 403.3.1.1 in accordance with accepted engineering practice.

Exception: Where occupancy density is known and documented in the plans, the outside air rate may be based on the design occupant density. Under no circumstance shall the occupancies used result in outside air less than one-half that resulting from application of Table 403.3.1.1 estimated maximum occupancy rates.

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403.3.1.1.2.3 Multiple zone recirculating systems. For ventilation systems wherein one or more air handlers supply a mixture of outdoor air and recirculated air to more than one ventilation zone, the outdoor air intake flow (V_{ot}) shall be determined in accordance with Sections 403.3.1.1.2.3.1 through 403.3.1.1.2.3.4.

403.3.1.1.2.3.1 Uncorrected outdoor air intake. The uncorrected outdoor air intake flow (V_{ot}) shall be determined in accordance with Equation 4-5.

$$V_{ou} = D\sum_{all\ zones}(R_p \times P_z) + \sum_{all\ zones}(R_a \times A_z) \qquad \textbf{(Equation 4-5)}$$

(Insert Facing Page 33)

403.3.1.1.2.3.1.1 Occupant diversity. The occupant diversity ratio (D) shall be determined in accordance with Equation 4-6 to account for variations in population within the ventilation zones served by the system.

$$D = P_s/\sum_{all\ zones} P_z \quad \textbf{(Equation 4-6)}$$

where:

P_s = System population: The total population in the area served by the system.

Exception: Alternative methods to account for occupant diversity shall be permitted, provided the resulting V_{ou} value is no less than that determined using Equation 4-5.

403.3.1.1.2.3.1.2 Design system population. Design system population (P_s) shall equal the largest (peak) number of people expected to occupy all ventilation zones served by the ventilation system during use.

Note: Design system population is always equal to or less than the sum of design zone population for all zones in the area served by the system because all zones may or may not be simultaneously occupied at design population.

403.3.1.1.2.3.2 System ventilation efficiency. The system ventilation efficiency (E_v) shall be determined in accordance with Section 403.3.1.1.2.3.3 for the Simplified Procedure or Appendix A of ASHRAE 62.1 for the Alternative Procedure.

Note: These procedures also establish zone minimum primary airflow rates for VAV systems.

403.3.1.1.2.3.3 Simplified procedure.

403.3.1.1.2.3.3.1 System ventilation efficiency. System ventilation efficiency (E_v) shall be determined in accordance with Equation 4-6a or 4-6b.

$$E_v = 0.88 \times D + 0.22 \text{ for } D < 0.60 \quad \textbf{(Equation 4-6a)}$$

$$E_v = 0.75 \text{ for } D \geq 0.60 \quad \textbf{(Equation 4-6b)}$$

403.3.1.1.2.3.3.2 Zone minimum primary airflow. For each zone, the minimum primary airflow ($V_{pz\text{-}min}$) shall be determined in accordance with Equation 4-7.

$$V_{pz\text{-}min} = V_{oz} \times 1.5 \quad \textbf{(Equation 4-7)}$$

403.3.1.1.2.3.4 Outdoor air intake. The design outdoor air intake flow (V_{ot}) shall be determined in accordance with Equation 4-8.

$$V_{ot} = V_{ou}/E_v \quad \textbf{(Equation 4-8)}$$

403.3.2 Group R-2, R-3 and R-4 occupancies. This section is not adopted. See Section 403.4

403.3.2.1 Outdoor air for dwelling units. This section is not adopted.

(Insert Facing Page 34)

403.3.2.2 Outdoor air for other spaces. This section is not adopted.

403.3.2.3 Local exhaust. This section is not adopted.

403.4 Group R whole house mechanical ventilation system. Each dwelling unit or sleeping unit shall be equipped with a whole house ventilation system that complies with Sections 403.4.1 through 403.4.6. Each dwelling unit or sleeping unit shall be equipped with local exhaust complying with Section 403.4.7. All occupied spaces, including public corridors, other than the Group R dwelling and sleeping unit, that support the Group R occupancy shall meet the ventilation requirements of Section 402 or the mechanical ventilation requirements of Sections 403.1 through 403.3.

403.4.1 System design. The whole house ventilation system shall consist of one or more supply fans, one or more exhaust fans, or an ERV/HRV with integral fans; and the associated ducts and controls. Local exhaust fans shall be permitted to serve as part of the whole house ventilation system when provided with the proper controls in accordance with Section 403.4.5. The systems shall be designed and installed to supply and exhaust the minimum outdoor airflow rates per Section 403.4.2 as corrected by the balanced and/or distributed whole house ventilation system coefficients in accordance with Section 403.4.3 where applicable.

403.4.2 Whole house mechanical ventilation rates. The sleeping unit whole house mechanical ventilation minimum outdoor airflow rate shall be determined in accordance with the breathing zone ventilation rates minimum outdoor airflow rate shall be determined in accordance with the breathing zone ventilation rates requirements of Section 403.3.1.1.1.2 using Equation 4-2. The dwelling unit whole house mechanical ventilation minimum outdoor airflow rate shall be determined in accordance with Equation 4-10 or Table 403.4.2.

$$Q_r = 0.01*A_{floor} + 7.5*(N_{br} + 1) \qquad \textbf{(Equation 4-10)}$$

where:

Q_r = Ventilation airflow rate, cubic feet per minute (cfm) but not less than 30 cfm for each dwelling unit.
A_{floor} = Conditioned floor area, square feet (ft^2)
N_{br} = Number of bedrooms, not less than one.

TABLE 403.4.2
WHOLE HOUSE MECHANICAL VENTILATION AIRFOW RATE
(CONTINUOUSLY OPERATING SYSTEM)

Floor area (ft^2)	Bedrooms[1]				
	1	2	3	4	≥5
<500	30	30	35	45	50
500 – 1000	30	35	40	50	55
1001 - 1500	30	40	45	55	60
1501 – 2000	35	45	50	60	65
2001 – 2500	40	50	55	65	70
2501 – 3000	45	55	60	70	75
3001 – 3500	50	60	65	75	80
3501 – 4000	55	65	70	80	85
4001 – 4500	60	70	75	85	90
4501 – 5000	65	75	80	90	95

1. Minimum airflow (Qr) is set at not less than 30 cfm for each dwelling unit.

(Continued on page 40a)

404.3 Automobile repair facilities. In buildings used for the repair of automobiles, each repair stall shall be equipped with an exhaust extension duct, extending to the outside of the building. Exhaust extension duct over 10 feet in length shall mechanically exhaust at least 300 cfm. Connecting offices and waiting rooms shall be supplied with conditioned air under positive pressure.

407.1 General. Mechanical ventilation for health care facilities licensed by Washington state shall be designed and installed in accordance with this code and the following provisions of the Washington Administrative Code (WAC):

1. Mechanical ventilation in ambulatory care facilities shall comply with chapter 246-330 WAC.
2. Mechanical ventilation for acute care hospitals shall comply with chapter 246-320 WAC.
3. Mechanical ventilation for nursing homes shall comply with chapter 388-97 WAC.

Mechanical ventilation for unlicensed ambulatory care facilities shall be designed and installed in accordance with this code and ASHRAE 170.

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TABLE 403.3.1.1—continued
MINIMUM VENTILATION RATES

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT^{2a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_a CFM/FT^{2a}	EXHAUST AIRFLOW RATE CFM/FT^2
Office				
Conference rooms	50	5	0.06	--
Kitchenettes[k]	25	5	0.06	0.30
Office spaces	5	5	0.06	--
Reception areas	30	5	0.06	--
Telephone/data entry	60	5	0.06	--
Main entry lobbies	10	5	0.06	--
Private dwellings, single and multiple				
Garages, common for multiple units[b]	--	--	--	0.75
Kitchens				See Table 403.4.7
Living areas[c]		See Table 403.4.2	--	--
Toilet rooms, bathrooms and laundry areas[g,i]	--	--	--	See Table 403.4.7
Public spaces				
Corridors serving other than Group R occupancies	--	--	0.06	--
Corridors serving Group R dwelling or sleeping units with whole house exhaust system	--	--	0.12	--
Corridors serving Group R dwelling or sleeping units with other than whole house exhaust system	--	--	0.06	--
Courtrooms	70	5	0.06	--
Elevator car	--	--	--	1
Elevator lobbies in parking garage	--	--	1.0	--
Legilslative chambers	50	5	0.06	--
Libraries	10	5	0.12	--
Museums (children's)	40	7.5	0.12	--
Museums/galleries	40	7.5	0.06	--
Places of religious worship	120	5	0.06	--
Shower room (per showerheat)[g]	--	--	--	50/20[f]
Smoking lounges[b]	70	60	--	--
Toilet rooms—Public[g]	--	--	--	50/70[e]

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TABLE 403.3.1.1—continued
MINIMUM VENTILATION RATES

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/100FT^{2a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_a CFM/FT^{2a}	EXHAUST AIRFLOW RATE CFM/FT^2
Sports and amusement				
Disco/dance floors	100	20	0.06	--
Bowling alleys (seating areas)	40	10	0.12	--
Game arcades	20	7.5	0.18	--
Ice arenas, without combustion engines[j]	--	--	0.30	0.5
Gym, stadium, arena (play area)[j]	--	--	0.30	--
Spectator areas	150	7.5	0.06	--
Swimming pools (pool and deck area)	--	--	0.48	--
Health club/aerobics room	40	20	0.06	--
Health club/weight room	10	20	0.06	--
Storage				
Janitor closets, trash rooms, recycling rooms	--	--	--	1.0
Repair garages, enclosed parking garage[b,d]	--	--	--	0.75
Storage rooms, chemical	--	--	--	1.5
Warehouses	--	--	0.06	--

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TABLE 403.3.1.1—continued
MINIMUM VENTILATION RATES

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/100FT^{2a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_a CFM/FT^{2a}	EXHAUST AIRFLOW RATE CFM/FT^2
Workrooms				
Bank vaults/safe deposit	5	5	0.06	--
Computer (without printing)	4	5	0.06	--
Copy, printing rooms	4	5	0.06	0.5
Darkrooms	--	--	--	1.0
Freezer and refrigerated spaces (<50°F)	0	10	0	0
Meat processing[c]	10	15	--	--
Pharmacy (prep area)	10	5	0.18	--
Photo studios	10	5	0.12	--

a. Based upon net occupiable floor area.
b. Mechanical exhaust required and the recirculation of air from such spaces is prohibited. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Item 3).
c. Spaces unheated or maintained below 50°F are not covered by these requirements unless the occupancy is continuous.
d. Ventilation systems in enclosed parking garages shall comply with Section 404.
e. Rates are per water closet or urinal. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
f. Rates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
g. Mechanical exhaust is required and recirculation from such spaces is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more that 10 percent air recirculated from these spaces. Return air from such spaces shall only be permitted to be recirculated when returned to an energy recovery ventilation system complying with Section 514. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Items 2 and 4).
h. For nail salons, manicure and pedicure stations shall be provided with a *source capture system* capable of exhausting not less than 50 cfm per station. Exhaust inlets shall be located in accordance with Section 502.20. Where one or more required source capture systems operate continuously during occupancy, the exhaust rate from such systems shall be permitted to be applied to the exhaust flow rate required by Table 403.3.1.1 for the nail salon.
i. A laundry area within a kitchen or bathroom is not required to have local exhaust. For the laundry area to qualify as being within the kitchen, the laundry room door must open directly into the kitchen and not into an adjacent corridor. Where there are doors that separate the laundry area from the kitchen or bathroom, the door shall be louvered.
j. When combustion equipment is intended to be used on the playing surface, additional dilution ventilation and/or source control shall be provided.
k. Kitchenettes require exhaust when they contain a domestic cooking appliance range or oven that is installed in accordance with Table 507.2.1. Kitchenettes that only contain a microwave cooking appliance are not required to have exhaust. A kitchenette may not contain commercial cooking appliances that require Type 1 or Type II exhaust as these occupancies are required to be exhausted to the kitchen category in Table 403.3.1.1.

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403.4.3 Ventilation quality adjustment. The minimum whole house ventilation rate from Section 403.4.2 shall be adjusted by the system coefficient in Table 403.4.3 based on the system type not meeting the definition of a balanced whole house ventilation system and/or not meeting the definition of a distributed whole house ventilation system.

$$Q_v = Q_r * C_{system} \quad \textbf{(Equation 4-11)}$$

where:

Q_v = Quality-adjusted ventilation airflow rate in cubic feet per minute (cfm)
Q_r = Ventilation airflow rate, cubic feet per minute (cfm) from Equation 4-10 or Table 403.4.1
C_{system} = System coefficient from Table 403.4.3

Table 403.4.3
SYSTEM COEFFICIENT (C_{system})

System Type	Distributed	Not Distributed
Balanced	1.0	1.25
Not Balanced	1.25	1.5

403.4.4 Whole house ventilation residential occupancies. Residential dwelling and sleeping unit whole house ventilation systems shall meet the requirements of Sections 403.4.4.1 or 403.4.4.2 depending on the occupancy of the residential unit.

403.4.4.1 Whole house ventilation in Group R-2 occupancies. Residential dwelling and sleeping units in Group R-2 occupancies system shall include supply and exhaust fans and be a balanced whole house ventilation system in accordance with Section 403.4.6.3. The system shall include a heat or energy recovery ventilator with a sensible heat recovery effectiveness as prescribed in Section C403.3.6 of the *Washington State Energy Code*. The whole house ventilation system shall operate continuously at the minimum ventilation rate determined in accordance with Section 403.4. The whole house supply fan shall provide ducted outdoor ventilation air to each habitable space within the residential unit.

403.4.4.2 Whole house ventilation for other than Group R-2 occupancies. Residential dwelling and sleeping units in other than Group R-2 occupancies, including I-1 condition 2 occupancies, shall have a whole house mechanical ventilation system with supply and exhaust fans in accordance with Section 403.4.6.1, 403.4.6.2, 403.4.6.3, or 403.4.6.4. The whole house ventilation system shall operate continuously at the minimum ventilation rate determined in accordance with Section 403.4.2 unless configured with intermittent off controls in accordance with Section 403.4.6.5. The whole house supply fan shall provide ducted outdoor ventilation air to each habitable space within the residential unit.

403.4.5 Whole house ventilation system controls. Controls for the whole house ventilation system shall comply with the following:

1. The whole house ventilation system shall be controlled with manual switches, timers or other means that provide for automatic operation of the ventilation system that have ready access for the occupant.
2. The whole house mechanical ventilation system shall be provided with controls that enable manual override off of the system by the occupant during periods of poor outdoor air quality. Contorls shall include permanent text or a symbol indicating their function. Recommended control permanent labeling to include text similar to the following: “Leave on unless outdoor air quality is very poor.” Manual controls shall have ready access for the occupant.
3. Whole house ventilation systems shall be configured to operate continuously except where intermittent off controls are provided in accordance with Section 403.4.6.5 and allowed by Section 403.4.4.2.

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403.4.6 Whole house ventilation system component requirements. Whole house ventilation supply and exhaust fans specified in this section shall have a minimum efficacy as prescribed in the *Washington State Energy Code*. The fans shall be rated for sound at a maximum of 1.0 sone at design airflow and static pressure conditions. Design and installation of the system or equipment shall be carried out in accordance with manufacturer's installation instructions.

Exceptions:

1. Central supply or exhaust fans serving multiple residential units do not need to comply with the maximum fan sone requirements.
2. Interior joining spaces provided with a 30 cfm transfer fan or a 25 square foot permanent opening do not require supply ventilation air directly to the space. Transfer fans shall meet the sone rating above and have whole house ventilation controls in accordance with Section 403.4.5.

403.4.6.1 Exhaust fans. Exhaust fans required shall be ducted directly to the outside in accordance with Section 501.3. Exhaust air outlets shall be designed to limit the pressure difference to the outside to limiting the outlet free area maximum velocity to 500 feet per minute and equipped with backdraft dampers or motorized dampers in accordance with *Washington State Energy Code*. Exhaust fans shall be tested and rated in accordance with HVI 915, HVI 916, and HVI 920. Exhaust fans required in this section may be used to provide local ventilation. Exhaust fans that are designed for intermittent exhaust airflow rates higher than the continuous exhaust airflow rates in Table 403.4.3 shall be provided with occupancy sensors or humidity sensors to automatically override the fan to the high speed airflow rate. The exhaust fans shall be tested and the testing results shall be submitted and posted in accordance with Section 403.4.6.7.

Exception: Central exhaust fans serving multiple residential units do not need to comply with the HVI testing requirements.

403.4.6.2 Supply fans. Supply fans used in meeting the requirements of this section shall supply outdoor air from intake openings in accordance with Sections 401.4 and 401.5. Intake air openings shall be designed to limit the pressure difference to the outside to limiting the inlet free area maximum velocity to 500 feet per minute and when designed for intermittent off operation shall be equipped with motorized dampers in accordance with the *Washington State Energy Code*. Supply fans shall be tested and rated in accordance with HVI 915, HVI 916, and HVI 920. Where outdoor air is provided to each habitable dwelling unit or sleeping unit by supply fan systems the outdoor air shall be filtered. The filter shall be provided with access for regular maintenance and replacement. The filter shall have a Minimum Efficiency Rating Value (MERV) of at least 8.

Exception: Central supply fans serving multiple residential units do not need to comply with the HVI testing requirements.

403.4.6.3 Balanced whole house ventilation system. A balanced whole house ventilation system shall include both supply and exhaust fans. The supply and exhaust fans shall have airflow that is within 10 percent of each other. The tested and balanced total mechanical exhaust airflow rate is within 10 percent or 5 cfm, whichever is greater, of the total mechanical supply airflow rate. The flow rate test results shall be submitted and posted in accordance with Section 403.4.6.6. The exhaust fan shall meet the requirements of Section 403.4.6.2. The supply fan shall meet the requirements of Section 403.4.6.3. For R-2 dwelling and sleeping units, the system is required to have balanced whole house ventilation but is not required to have distributed whole house ventilation where the not distributed system coefficient from Table 403.4.2 is utilized to correct the whole house mechanical ventilation rate. The system shall be design and balanced to meet the pressure equalization requirements of Section 501.4. Intermittent dryer exhaust, intermittent range hood exhaust, and intermittent toilet room exhaust airflow rates above the residential dwelling or sleeping unit minimum ventilation rate are exempt from the balanced airflow calculation.

403.4.6.4 Furnace integrated supply. Systems using space condition heating and/or cooling air handler fans for outdoor air supply air distribution are not permitted.

Exception: Air handler fans shall be permitted that have multi-speed or variable speed supply airflow control capability with a low speed operation not greater than 25 percent of the rated supply air flow capacity during ventilation only operation. Outdoor air intake openings must meet the provisions of Sections 401.4 and 401.5 and must include a motorized damper that is activated by the whole house ventilation system controller. Intake air openings shall be designed to limit the pressure difference to the outside to limiting the inlet free area

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maximum velocity to 500 ft per min. The motorized damper must be controlled to maintain the outdoor airflow intake airflow within 10 percent of the whole house mechanical exhaust airflow rate. The supply air handler shall provide supply air to each habitable space in the residential unit. The whole house ventilation system shall include exhaust fans in accordance with Section 403.4.6.2 to meet the pressure equalization requirements of Section 501.4. The flow rate for the outdoor air intake must be tested and verified at the minimum ventilation fan speed and the maximum heating or cooling fan speed. The results of the test shall be submitted and posted in accordance with Section 403.4.6.6.

403.4.6.5 Intermittent off operation. Whole house mechanical ventilation systems shall be provided with advanced controls that are configured to operate the system with intermittent off operation and shall operate for a least two hours in each four-hour segment. The whole house ventilation airflow rate determined in accordance with Section 403.4.2 as corrected by Section 403.4.3 shall be multiplied by the factor determined in accordance with Table 403.4.6.5.

TABLE 403.4.6.5
INTERMITTENT WHOLE HOUSE MECHANICAL VENTILATION RATE FACTORS[a,b]

Run-time Percentage in Each 4-hour Segment	50%	66%	75%	100%
Factor[a]	2	1.5	1.3	1.0

a. For ventilation system run-time values between those given, the factors are permitted to be determined by interpolation.

b. Extrapolation beyond the table is prohibited.

403.4.6.6 Testing. Whole house mechanical ventilation systems shall be tested, balanced and verified to provide a flow rate not less than the minimum required by Sections 403.4.2 and 403.4.3. Testing shall be performed according to the ventilation equipment manufacturer's instructions, or by using a flow hood, flow grid, or other airflow measuring device at the mechanical ventilation fan's inlet terminals, outlet terminals or grilles or in the connected ventilation ducts. Where required by the building official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the building official and shall be posted in the residential unit in accordance with Section 403.4.6.7.

403.4.6.7 Certificate. A permanent certificate shall be completed by the mechanical contractor, test and balance contractor or other approved party and posted on a wall in the space where the furnace is located, a utility room, or an *approved* location inside the building. When located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels. The certificate shall list the flow rate determined from the delivered airflow of the whole house mechanical ventilation system as installed and the type of mechanical whole house ventilation system used to comply with Section 403.4.3.

403.4.7 Local exhaust. Bathrooms, toilet rooms and kitchens shall include a local exhaust system. Such local exhaust systems shall have the capacity to exhaust the minimum airflow rate in accordance with Table 403.4.7 and Table 403.3.1.1, including notes. Fans required by this section shall be provided with controls that enable manual override or automatic occupancy sensor, humidity sensor or pollutant sensor controls. An "on/off" switch shall meet this requirement for manual controls. Manual fan controls shall be provided with ready access in the room served by the fan.

TABLE 403.4.7
MINIMUM EXHAUST RATES

Area to be exhausted	Exhaust Rate	
	Intermittent	Continuous
Kitchens	100 cfm	30 cfm
Bathrooms - Toilet rooms	50 cfm	20 cfm

403.4.7.1 Whole house exhaust controls. If the local exhaust fan is included in a whole house ventilation system in accordance with Section 403.4.6, the exhaust fan shall be controlled to operate as specified in Section 403.4.5.

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403.4.7.2 Local exhaust fans. Exhaust fans shall meet the following criteria.

1. Exhaust fans shall be tested and rated in accordance with HVI 915, HVI 916, and HVI 920.

   Exception: Where a range hood or down draft exhaust fan is used for local exhaust for a kitchen, the device is not required to be rated per these standards.
2. Fan airflow rating and duct system shall be designed and installed to deliver at least the exhaust airflow required by Table 403.4.4. The airflows required refer to the delivered airflow of the system as installed and tested using a flow hood, flow grid, or other airflow measurement device. Local exhaust systems shall be tested, balanced and verified to provide a flow rate not less than the minimum required by this section.
3. Design and installation of the system or equipment shall be carried out in accordance with manufacturers' installation instructions.
4. Fan airflow rating and duct system shall be designed and installed to deliver at least the exhaust airflow required by Table 403.4.3.

Exceptions:

1. An exhaust airflow rating at a pressure of 0.25 in. w.g. may be used, provided the duct sizing meets the prescriptive requirements of Table 403.4.7.2.
2. Where a range hood or down draft exhaust fan is used to satisfy the local ventilation requirements for kitchens, the range hood or down draft exhaust shall not be less than 100 cfm at 0.10 in. w.g.

TABLE 403.4.7.2
PRESCRIPTIVE EXHAUST DUCT SIZING

Fan Tested cfm at 0.25 inches w.g.	Minimum Flex Diameter	Maximum Length in Feet	Minimum Smooth Diameter	Maximum Length in Feet	Maximum Elbows[a]
50	4 inches	25	4 inches	70	3
50	5 inches	90	5 inches	100	3
50	6 inches	No Limit	6 inches	No Limit	3
80	4 inches[b]	NA	4 inches	20	3
80	5 inches	15	5 inches	100	3
80	6 inches	90	6 inches	No Limit	3
100	5 inches[b]	NA	5 inches	50	3
100	6 inches	45	6 inches	No Limit	3
125	6 inches	15	6 inches	No Limit	3
125	7 inches	70	7 inches	No Limit	3

a. For each additional elbow, subtract 10 feet from length.
b. Flex ducts of this diameter are not permitted with fans of this size.

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501.3.1 Location of Exhaust Outlet. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:

1. **For ducts conveying explosive or flammable vapors, fumes or dusts:** 30 feet (9144 mm) from the property line; 10 feet (3048 mm) from operable openings into the building; 6 feet (1829 mm) from exterior walls and roofs; 30 feet (9144 mm) from combustible walls and operable openings into the building which are in the direction of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.
2. **For other product-conveying outlets:** 10 feet (3048 mm) from property lines; 3 feet (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from operable openings into the building; 10 feet (3048 mm) above adjoining grade.
3. **For environmental air duct exhaust other than enclosed parking garage and transformer vault exhaust:** 3 feet (914 mm) from property lines, 3 feet (914 mm) from operable openings into the building for all occupancies other that Group U, and 10 feet (3048 mm) from a mechanical air intake.
   Exceptions:
   1. The separation between an air intake and exhaust outlet on a single listed package HVAC unit.
   2. Exhaust from environmental air systems other than garages may be discharged into an open parking garage.
   3. Except for Group I occupancies, where ventilation system design circumstances require building HVAC air to be relieved, such as during economizer operation, such air may be relieved into an open or enclosed parking garage within the same building.
4. Exhaust outlets serving structures in flood hazard areas shall be installed at or above the elevation required by Section 1613 of the *International Building Code* for utilities and attendant equipment.
5. **For enclosed parking garage exhaust system outlets and transformer vault exhaust system outlets:** 10 feet (3048 mm) from property lines which separate one lot from another; 10 feet (3048 mm) from operable openings into buildings; 3 feet (914 mm) horizontally from, 10 feet (3048 mm) above or 10 feet (3048 mm) below adjoining finished sidewalk.
6. **For elevator machinery rooms in enclosed or open parking garages:** Exhaust outlets may discharge air directly into the parking garage.
7. For specific systems see the following sections:
   7.1 Clothes dryer exhaust, Section 504.4.
   7.2 Kitchen hoods and other kitchen exhaust equipment, Sections 506.3.13, 506.4 and 506.5.
   7.3 Dust stock and refuse conveying systems, Section 511.2.
   7.4 Subslab soil exhaust systems, Section 512.4.
   7.5 Smoke control systems, Section 513.10.3.
   7.6 Refrigerant discharge, Section 1105.7.
   7.7 Machinery room discharge, Section 1105.6.1.

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501.4 Pressure equalization. Mechanical exhaust systems shall be sized to remove the quantity of air required by this chapter to be exhausted. The system shall operate when air is required to be exhausted. Where mechanical exhaust is required in a room or space, such space shall be maintained with a neutral or negative pressure. If a greater quantity of air is supplied by a mechanical ventilating supply system than is removed by a mechanical exhaust for a room, adequate means shall be provided for the natural or mechanical exhaust of the excess air supplied. If only a mechanical exhaust system is installed for a room or if a greater quantity of air is removed by a mechanical exhaust system than is supplied by a mechanical ventilating supply system for a room, adequate makeup air consisting of supply air, transfer air or outdoor air shall be provided to satisfy the deficiency. The calculated building infiltration rate shall not be used to satisfy the requirements of this section.

Exception: Intermittent domestic range exhaust, intermittent domestic dryer exhaust and intermittent local exhaust systems in R-3 occupancies and dwelling units in R-2 occupancies are excluded from the pressure equalization requirement unless required by Section 504 or Section 505.

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504.4 Exhaust installation. Dryer exhaust ducts for clothes dryers shall terminate on the outside of the building and shall be equipped with a backdraft damper located where the duct terminates. Dryer exhaust ducts may terminate at exterior wall louvers with openings spaced not less than 1/2-inch in any direction.

Screens shall not be installed at the duct termination. Ducts shall not be connected or installed with sheet metal screws or other fasteners that will obstruct the exhaust flow. Clothes dryer exhaust ducts shall not be connected to a vent connector, vent or chimney. Clothes dryer exhaust ducts shall not extend into or through ducts or plenums.

Domestic dryer exhaust ducts may terminate at a common location where each duct has an independent back-draft damper.

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504.10 Common exhaust systems for clothes dryers located in multistory structures. Where a common multistory duct system is designed and installed to convey exhaust from multiple clothes dryers, the construction of the system shall be in accordance with all of the following:

1. The shaft in which the duct is installed shall be constructed and fire-resistance rated as required by the *International Building Code*.
2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 2.
3. Rigid metal ductwork shall be installed within the shaft to convey the exhaust. The ductwork shall be constructed of sheet steel having a minimum thickness of 0.0187 inch (0.4712 mm) (No. 26 gage) and in accordance with SMACNA *Duct Construction Standards*.
4. The ductwork within the shaft shall be designed and installed without offsets.
5. The exhaust fan motor design shall be in accordance with Section 503.2.
6. The exhaust fan motor shall be located outside of the airstream.
7. The exhaust fan shall run continuously, and shall be connected to a standby power source.
8. Exhaust fan operation shall be monitored in an *approved* location and shall initiate an audible or visual signal when the fan is not in operation.
9. Makeup air shall be provided for the exhaust system to maintain the minimum flow for the exhaust fan when the dryers are not operating. Additionally, makeup air shall be provided when required by Section 504.5.
10. A cleanout opening shall be located at the base of the shaft to provide *access* to the duct to allow for cleaning and inspection. The finished opening shall be not less than 12 inches by 12 inches (305 mm by 305 mm).
11. Screens shall not be installed at the termination.
12. The common multistory duct system shall serve only clothes dryers and shall be independent of other exhaust systems.

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505.3 Exhaust ducts. Where domestic range hoods and domestic appliances equipped with downdraft exhaust are provided, such hoods and appliances shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls, shall be air tight, shall be equipped with a backdraft damper and shall be independent of all other exhaust systems.

Domestic kitchen exhaust ducts may terminate with other domestic dryer exhaust and residential local exhaust ducts at a common location where each duct has an independent back-draft damper.

Listed and labeled exhaust booster fans shall be permitted when installed in accordance with the manufacturer's installation instructions.

Exceptions:

1. In other than Group I-1 and I-2, where installed in accordance with the manufacturer's installation instructions and where mechanical ventilation is otherwise provided in accordance with Chapter 4, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.
2. Ducts for domestic kitchen cooking appliances equipped with downdraft exhaust systems shall be permitted to be constructed of Schedule 40 PVC pipe and fittings provided that the installation complies with all of the following:
   - 2.1. The duct shall be installed under a concrete slab poured on grade.
   - 2.2. The underfloor trench in which the duct is installed shall be completely backfilled with sand or gravel.
   - 2.3. The PVC duct shall extend not more than 1 inch (25 mm) above the indoor concrete floor surface.
   - 2.4. The PVC duct shall extend not more than 1 inch (25 mm) above grade outside of the building.
   - 2.5. The PVC ducts shall be solvent cemented.

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506.3.2.4 Vibration isolation. A vibration isolation connector for connecting a duct to a fan shall consist of noncombustible packing in a metal sleeve joint of approved design or shall be a coated-fabric flexible duct connector rated for continuous duty at a temperature of not less than 1500°F (816°C). Vibration isolation connectors shall be installed only at the connection of a duct to a fan inlet or outlet.

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506.3.9 Grease duct cleanout location, spacing and installation.

506.3.9.1 Grease duct horizontal cleanout. Cleanouts located on horizontal sections of ducts shall:

1. Be spaced not more than 20 feet (6096 mm) apart.
2. Be located not more than 10 feet (3048 mm) from changes in direction that are greater than 45 degrees (0.79 rad).
3. Be located on the bottom only where other locations are not available and shall be provided with internal damming of the opening such that grease will flow past the opening without pooling. Bottom cleanouts and openings shall be approved for the application and installed liquid-tight.
4. Not be closer than 1 inch (25.4 mm) from the edges of the duct.
5. Have dimensions of not less than 12 inches by 12 inches (305 mm by 305 mm). Where such dimensions preclude installation, the openings shall be not less than 12 inches (305 mm) on one side and shall be large enough to provide access for cleaning and maintenance.
6. Be located at grease reservoirs.

506.3.9.2 Grease duct vertical cleanouts. Where ducts pass vertically through floors, cleanouts shall be provided. A minimum of one cleanout shall be provided on each floor. Cleanout openings shall be not less than 1 1/2 inches (38 mm) from all outside edges of the duct or welded seams.

506.3.11 Grease duct enclosures. A commercial kitchen grease duct serving a Type I hood that penetrates a ceiling, wall, floor or any concealed spaces shall be enclosed from the point of penetration to the outlet terminal. In-line exhaust fans not located outdoors shall be enclosed as required for grease ducts. A duct shall penetrate exterior walls only at locations where unprotected openings are permitted by the *International Building Code*. The duct enclosure shall serve a single grease duct and shall not contain other ducts, piping or wiring systems. Duct enclosures shall be a shaft enclosure in accordance with Section 506.3.11.1, a field-applied enclosure assembly in accordance with Section 506.3.11.2 or a factory-built enclosure assembly in accordance with
Section 506.3.11.3. Duct enclosures shall have a fire-resistance rating of not less than that of the assembly penetrated. The duct enclosure need not exceed 2 hours but shall not be less than 1 hour. Fire dampers and smoke dampers shall not be installed in grease ducts.

Exception: A duct enclosure shall not be required for a grease duct that penetrates only a nonfire-resistance-rated roof/ceiling assembly.

(Insert Facing Page 54)

507.1.2 Domestic cooking appliance used for commercial purposes. Domestic cooking appliances utilized for commercial purposes shall be provided with Type I, Type II or residential hoods as required for the type of appliances and processes in accordance with Table 507.1.2 and Sections 507.2 and 507.3. Domestic cooking appliances utilized for domestic purposes shall comply with Section 505.

TABLE 507.1.2
TYPE OF HOOD REQUIRED FOR DOMESTIC COOKING APPLIANCES IN THE FOLLOWING SPACES[a, b]

Type of Space	Type of Cooking	Type of Hood
Church	1. Boiling, steaming and warming precooked food 2. Roasting, pan frying and deep frying	Type II hood Type I hood
Community or party room in apartment and condominium	1. Boiling, steaming and warming precooked food 2. Roasting, pan frying and deep frying	Residential hood[c] or Type II hood[d] Type I hood
Day care	1. Boiling, steaming and warming precooked food 2. Roasting, pan frying and deep frying	Residential hood[c] or Type II hood[d] Type I hood
Dormitory, boarding home, nursing home	1. Boiling, steaming and warming precooked food 2. Roasting, pan frying and deep frying	Type II hood Type I hood
Office lunch room	1. Boiling, steaming and warming precooked food 2. Roasting, pan frying and deep frying	Residential hood[c] or Type II hood[d] Type I hood

a. Commercial cooking appliances shall comply with Section 507.2.
b. Requirements in this table apply to electric or gas fuel appliances only. Solid fuel appliances or charbroilers require Type I hoods.
c. Residential hood shall ventilate to the outside.
d. Type II hood required when more than one appliance is used.

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 I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m^3 or less of grease when tested at an exhaust flow rate of 500 cfm in accordance ith Section 17 of UL 710B.
2. A Type I hood shall not be required in an R-2 type occupancy with not more than 16 residents.

(Insert Facing Page 57)

SECTION 515
WASTE OR LINEN CHUTE VENTING

515.1 General. Waste or linen chutes shall be gravity vented per NFPA 82.

Exception: Waste or linen chutes may be mechanically ventilated by an exhaust fan in accordance with Section 713.13.7 of the *International Building Code*.

(Insert Facing Page 67)

601.2 Air movement in egress elements. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

Exceptions:

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted provided that each such corridor is directly supplied with *outdoor air* at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m^2) or less in area, utilization of corridors for conveying return air is permitted.
4. Incidental air movement from pressurized rooms within health care facilities, provided that the corridor is not the primary source of supply or return to the room.
5. Where such air is part of an engineered smoke control system..
6. Air supplied to corridors serving residential occupancies shall not be considered as providing ventilation air to the dwelling units and sleeping units subject to the following:
   6.1 The air supplied to the corridor is 100% outside air, and
   6.2 The units served by the corridor have conforming ventilation air independent of the air supplied to the corridor, and
   6.3 For other than high-rise buildings, the supply fan will automatically shut off upon activation of corridor smoke detectors installed in accordance with Section 606.2.4; or
   6.4 For high-rise buildings, the supply fan will automatically shut off upon activation of the smoke detectors required by Section 907.2.12.1 of the *International Fire Code* or upon receipt of another approved fire alarm signal. The supply fan is not required to be automatically shut off when used as part of an approved building stairwell or elevator hoistway pressurization system. Corridor smoke detectors shall be installed in accordance with Section 606.2.5.

(Insert Facing Page 69)

602.1 General. Supply, return, exhaust, relief and ventilation air plenums shall be limited to uninhabited crawl spaces, areas above a ceiling or below the floor, attic spaces and mechanical equipment rooms. Plenums shall be limited to one fire area. Air systems that serve multiple fire areas shall be ducted from the boundary of the fire area served directly to the air-handling equipment. Fuel-fired appliances shall not be installed within a plenum.

(Insert Facing Page 70)

603.5.1 Gypsum ducts. The use of gypsum boards to form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125°F (52°C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. Air ducts formed by gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.

Exception: In other than Group I-2 occupancies, gypsum boards may be used for ducts that are only used for stairwell or elevator pressurization supply air. The gypsum duct shall not attach directly to the equipment.

(Insert Facing Page 73)

605.1 General. Heating and air-conditioning systems shall be provided with approved air filters. Filters shall be installed such that all return air, outdoor air and makeup air is filtered upstream from any heat exchanger or coil. Filters shall be installed in an approved convenient location. Liquid adhesive coatings used on filters shall have a flash point not lower than 325°F (163°C).

Exception: Cooling coils that are designed, controlled and operated to provide sensible cooling only do not require filtration at the terminal device.

605.4 Particulate matter removal. Particulate matter filters or air cleaners having a minimum efficiency reporting value (MERV) of not less than 6 for ducted air handlers and not less than 4 for ductless mini-split systems shall be provided upstream of all cooling coils or other devices with wetted surfaces through which air is supplied to an occupiable space.

606.2.1 Return air systems. Smoke detectors shall be installed in return air systems with a design capacity greater than 2,000 cfm (0.9 m^3/s), in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances.

Exceptions:

1. Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the International Fire Code. The area smoke detection system shall comply with Section 606.4.
2. Smoke detectors are not required in the air system where all of the air is exhausted and not recirculated back to any portion of the building. Additionally, smoke detectors are not required in the supply system that provides the makeup air for the exhaust system.

606.2.2 Common supply and return air systems. Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than 2,000 cfm (0.9 m^3/s), the return air system shall be provided with smoke detectors in accordance with Section 606.2.1.

Exception: Individual smoke detectors shall not be required for each fan-powered terminal unit, provided that such units do not have an individual design capacity greater than 2,000 cfm (0.9 m^3/s) and will be shut down by activation of one of the following:

1. Smoke detectors required by Sections 606.2.1 and 606.2.3.
2. An approved area smoke detector system located in the return air plenum serving such units.
3. An area smoke detector system as prescribed in the exception to Section 606.2.1.

In all cases, the smoke detectors shall comply with Sections 606.4 and 606.4.1.

The shut down of fan-powered terminal units may be performed by a building automation system upon activation of smoke detection as described in Section 606.2.2, Exception Items 1, 2, or 3. The building automation system is not required to be listed as a smoke control system and is not required to comply with UL Standard 864: Standard for Control Units and Accessories for Fire Alarm Systems.

606.2.4 Corridors serving Group R occupancies in other than high-rise buildings. Corridors that serve Group R occupancies in other than high-rise buildings and that are mechanically ventilated with supply air shall be equipped with smoke detectors spaced in accordance with NFPA 72. The supply fan shall automatically shut off upon activation of the corridor smoke detectors.

Exception: Corridor smoke detection is not required when air is returned back to the supply fan from the corridor and return air smoke detectors are installed in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances designed to automatically shut off the supply fan.

606.2.5 Corridors serving Group R occupancies in high-rise buildings. Corridors that serve Group R occupancies in high-rise buildings and that are mechanically ventilated with supply air shall be equipped with smoke detectors that are spaced in accordance with NFPA 72 and air supply inlets to the corridor shall be provided with smoke/fire dampers. The supply inlet smoke/fire dampers shall automatically close upon activation of the corridor smoke detectors.

Exceptions:

1. Corridor smoke detection is not required to close the supply inlet smoke/fire dampers when the smoke/fire dampers are used as part of an approved building stairwell or elevator hoistway pressurization smoke control system.
2. Corridor smoke detection is not required when air is returned back to the supply fan from the corridor and return air smoke detectors are installed in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances designed to automatically shut off the supply fan.

(Insert Facing Page 75)

Informational Note: Boilers and pressure vessels are regulated by Chapter 70.79 RCW and Chapter 296.104 WAC in addition to the requirements of this code.

1001.1 Scope. This chapter shall govern the installation, alteration and repair of boilers, water heaters and pressure vessels.

Exceptions:

1. Pressure vessels used for unheated water supply.
2. Portable unfired pressure vessels and Interstate Commerce Commission containers.
3. Containers for bulk oxygen and medical gas.
4. Unfired pressure vessels having a volume of 5 cubic feet (0.14 m^3) or less operating at pressures not exceeding 250 pounds per square inch (psi) (1724 kPa) and located within occupancies of Groups B, F, H, M, R, S and U.
5. Pressure vessels used in refrigeration systems that are regulated by Chapter 11 of this code.
6. Pressure tanks used in conjunction with coaxial cables, telephone cables, power cables and other similar humidity control systems.
7. Any boiler or pressure vessel subject to inspection by federal or state inspection programs.

(Insert Facing Page 95)

1105.6.3 Ventilation rate. For other than ammonia systems, the mechanical ventilation systems shall be capable of exhausting the minimum quantity of air both at normal operating and emergency conditions, as required by Sections 1105.6.3.1 and 1105.6.3.2. The minimum required emergency ventilation rate for ammonia shall be 30 air changes per hour and the room conditions shall be in accordance with IIAR2. Multiple fans or multispeed fans shall be allowed to produce the emergency ventilation rate and to obtain a reduced airflow for normal ventilation.

(Insert Facing Page 108)

1209.5 Thermal barrier required. Radiant floor heating and snow melt systems shall be provided with a thermal barrier in accordance with Sections 1209.5.1 through 1209.5.4. Concrete slab-on-grade, asphalt and paver-system type pavements shall have a minimum of R-10 insulation installed under the area to be snow melted, or R-5 insulation shall be installed under and at the slab edges of the area to be snow melted. The insulation shall be located underneath the snow and ice melt hydronic piping or cable and along all edges of the pavement where the snow and ice melt system is installed in accordance with the snow and ice melt manufacturer's instructions.

1209.5.1 Slab-on-grade installation. Radiant piping utilized in slab-on-grade applications shall be provided with insulating materials installed beneath the piping as required by the Washington State Energy Code.

(Insert Facing Page 117)

1210.7.6 Expansion tanks. Shutoff valves shall be installed at connections to expansion tanks. A method of draining the expansion tank downstream of the shutoff valve shall be provided.

(Insert Facing Page 119)

1402.8.1.2 Rooftop-mounted solar thermal collectors and systems. The roof shall be constructed to support the loads imposed by roof-mounted solar collectors. Where mounted on or above the roof covering, the collector array, mounting systems and their attachments to the roof shall be constructed of noncombustible materials or fire-retardant-treated wood conforming to the *International Building Code* to the extent required for the type of roof construction of the building to which the collectors are accessory.

(Insert Facing Page 126)

ASHRAE

ASHRAE
1791 Tulie Circle NE
Atlanta GA 30329

Standard reference number	Title	Referenced in code section number
ANSI/AMCA 210-ANSI/ASHRAE 51-07	Laboratory Methods of Testing Fans for Aerodynamic Performance Rating	403.3.2.4
ASHRAE-2017	ASHRAE Fundamentals Handbook	603.2
15-2019	Safety Standard for Refrigeration Systems	1101.6, 1105.8, 1108.1
34-2016	Designation and Safety Classification of Refrigerants	202, 1102.2.1, 1103.1
62.1-2016	Ventilation for Acceptable Indoor Air Quality	403.3.1.1.2.3.2
62.2-2016	Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings	403.4.11
170-2017	Ventilation for Health Care Facilities	407
180-2012	Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems	102.3

(Insert Facing Page 130)

HVI

Home Ventilating Institute
1740 Dell Range Blvd., Suite H PMB 450
Cheyenne, WY 82009

Standard reference number	Title	Referenced in code section number
HVI 915-2015	Procedure for Loudness Testing of Residential Fan Products	403.4.6.1, 403.4.6.2,403.4.7.2
HVI 916-2015	Airflow Test Procedure	403.4.6.1, 403.4.6.2,403.4.7.2
HVI 920-2015	Product Performance Certification Procedure Including Verification and Challenge	403.4.6.1, 403.4.6.2,403.4.7.2

(Insert Facing Page 137)

WAC 51-52-21000 – International Fuel Gas Code

101.2 Scope. This code shall apply to the installation of fuel gas piping systems, fuel gas utilization equipment, gaseous hydrogen systems and regulated accessories in accordance with Section 101.2.1 through 101.2.5.

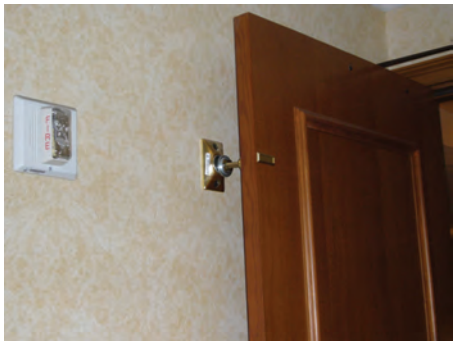
Exceptions: 1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the International Residential Code.

2. The standards for liquefied petroleum gas installations shall be the 2017 Edition of NFPA 58 (Liquefied Petroleum Gas Code) and the 2018 Edition of ANSI Z223.1/NFPA 54 (National Fuel Gas Code).

(Insert Facing Page 1 of IFGC)

1105.6.2

Fire-protection-rated Doors in Existing Group I-2



International Code Council®

A hold-open device installed at a smoke compartment separation in an existing building.

CHANGE TYPE: Addition

CHANGE SUMMARY: Fire-protection-rated doors in existing Group I-2 occupancies have three options for automatic closing operations.

2018 CODE: **1105.6.2 Group I-2 occupancies.** In Group I-2, where a door serves as an opening protective in a fire barrier, smoke barrier or fire wall and where the door is equipped with a hold-open device, such door shall automatically close upon any of the following conditions:

1. Actuation of smoke detectors initiating the hold-open device.
2. Activation of the fire alarm system within the zone.
3. Activation of an automatic sprinkler system within the zone.

CHANGE SIGNIFICANCE: This revision provides options for existing doors in fire barrier walls, fire walls and smoke barriers. This section applies to the doors that provide opening protection and are automatic closing upon release of a hold-open device. Doors that are self-closing are not affected by this section.

The three options specify that the doors release upon activation of the smoke detector located adjacent to the doors, activation of a fire alarm device within the fire alarm zone within which the doors are located, or the operation of the fire sprinkler system protecting the area within which the doors are located.

602.3.1

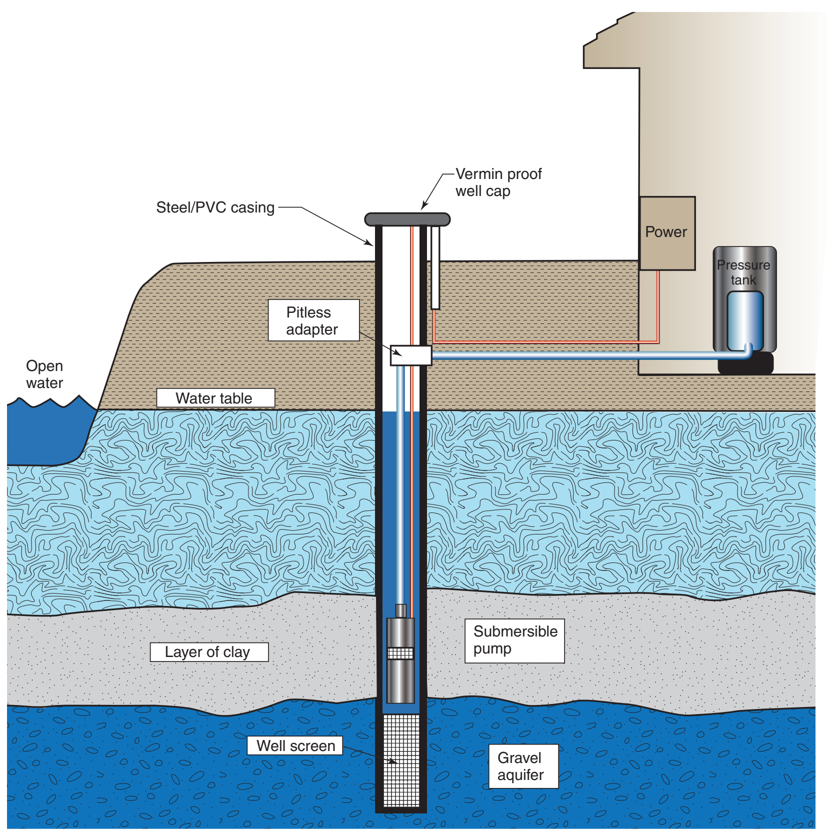
Standard for Water Well Construction

CHANGE TYPE: Modification

CHANGE SUMMARY: Where local regulations for the construction of water wells do not exist or are lacking in details, the code requires well construction to comply with Standard NGWA-01.

2018 CODE: **602.3.1 Sources.** Dependent on geological and soil conditions and the amount of rainfall, individual water supplies are of the following types: drilled well, driven well, dug well, bored well, spring, stream or cistern. Surface bodies of water and land cisterns shall not be sources of individual water supply unless properly treated by *approved* means to prevent contamination. Individual water supplies shall be constructed and installed in accordance with the applicable state and local laws. Where such laws do not address all of the requirements set forth in NGWA-01, individual water supplies shall comply with NGWA-01 for those requirements not addressed by state and local laws.

CHANGE SIGNIFICANCE: In some areas, the construction of an individual water supply such as a well, is either not regulated or is minimally regulated. The standard NGWA-01 provides the necessary requirements to address all of the pertinent details that should be considered when constructing a well to ensure safe construction. The addition of the standard to the code is not intended to override any state or local laws regarding the construction of individual water supplies. The standard is to be applied to fill in and improve any regulations that are already in place.



Water well

NEW 2018 BUILDING CODES

2018 Code Effective Date extended to February 1, 2021:

Initially, the WA State Governor delayed the adoption of all of the new 2018 Building Codes from July 1, 2020, until November 1, 2020 because of the COVID-19 situation.

Subsequently, at a Special Council meeting on June 26, 2020, the Washington State Building Code Council voted to extend the effective date to February 1, 2021.

https://sbcc.wa.gov/news/2018-code-effective-date-extended-february-1-2021

1. Overview of the Key Changes to the 2018 I-Codes:
   This webpage is developed by the International Code Council and gives a brief overview of the major changes to all of the International Codes (i.e. Commercial, Residential, Fire, Mechanical, Gas, Existing, etc.). https://www.iccsafe.org/about/periodicals-and-newsroom/key-changes-in-the-2018-i-codes/

2. 2018 IRC Significant Changes:
   Handout developed by the International Code Council. This handout identifies important changes in the IRC from 2015 to 2018 edition. https://www.iccsafe.org/wp-content/uploads/2018-IRC-UPDATE-Handout-9-1-17.pdf

3. 2018 IBC Significant Changes:
   Handout developed by the International Code Council. This handout identifies important changes in the IBC from 2015 to 2018 edition. https://www.iccsafe.org/wp-content/uploads/2018-IBC-UPDATE-Handout-9-1-17.pdf

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4. 2018 IRC Significant Changes:
   Video developed by the International Code Council-Georgia
   https://vimeo.com/255977780

5. 2018 IBC and 2018 IRC Significant Changes Related to Wood Construction:
   Well produced video by the American Wood Council. The IRC presentation begins at 57:20 minutes. https://www.youtube.com/watch?v=z3bZJCXBDV0

6. 2018 IRC Significant Changes to Deck Provisions:
   Well produced video by the American Wood Council.
   https://www.youtube.com/watch?v=tRMXhsKrnnI

Chapter 51-04 WAC
POLICIES AND PROCEDURES FOR CONSIDERATION OF STATEWIDE AND LOCAL AMENDMENTS TO THE STATE BUILDING CODE

Last Update: 12/8/20

WAC

WAC 51-04-010 Declaration of purpose. The Washington state building code council, hereinafter called the council, is required by chapter 266, Laws of 1988, to adopt and maintain the state building code, hereinafter referred to as the building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature.

(1) The primary objective of the council is to encourage consistency in the building code throughout the state of Washington and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. An objective of statewide adoption is to minimize state amendments to the model codes.

The building code shall be as defined in WAC 51-04-015(8).

(2) The council is also required by RCW 19.27.074 to approve or deny all city and county amendments to the building code that apply to single family or multifamily buildings as defined in RCW 19.27.015.

(3) The council may issue opinions relating to the codes at the request of a local official charged with the duty to enforce the enumerated codes as specified in RCW 19.27.031 and 19.27A.015.

(4) The purpose of this chapter is to establish policies and procedures for:

(a) Submittal and council review and consideration of proposed statewide amendments to the building code;

(b) Submittal and council review and consideration of proposed city and county amendments to the building code that apply to single family or multifamily buildings as defined in RCW 19.27.074;

(c) Reconsideration of council actions; and

(d) Issuing opinions to local officials.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-010, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.031, 19.27.074 and 19.27.035. WSR 17-03-123, § 51-04-010, filed 1/18/17, effective 2/18/17. Statutory Authority: RCW 19.27.035, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 07-15-043, § 51-04-010, filed 7/13/07, effective 8/13/07. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-010, filed 1/3/90, effective 2/3/90; Order 76-02, § 51-04-010, filed 9/1/76.]

WAC 51-04-015 Definitions. (1) "Council" means the Washington state building code council.

(2) "Emergency statewide amendment" means any proposed statewide amendment, the adoption of which is necessary immediately in order to protect life, safety or health of building occupants; preserve the structural integrity of buildings built to the state building code; to correct errors and omissions; or by the direction of the Washington state legislature or federal legislation. Emergency statewide amendments to the state building code must be adopted in accordance with the Administrative Procedure Act, chapter 34.05 RCW.

(3) "Local government amendment" means any amendment to the state building code, as adopted by cities or counties for implementation and enforcement in their respective jurisdictions.

(4) "Local government residential amendment" means any amendment to the state building code, as adopted by cities or counties for implementation and enforcement in their respective jurisdictions, that applies to single and multifamily buildings as defined by RCW 19.27.015.

(5) "Local official" and "code official" means the officer or other designated authority charged with the administration and enforcement of the codes adopted under chapters 19.27 and 19.27A RCW.

(6) "Model codes" means the codes developed by the model code organizations and adopted by and referenced in chapter 19.27 RCW.

(7) "Model code organization(s)" means the national code-promulgating organizations that develop the model codes (as defined herein), such as the International Code Council, International Association of Plumbing and Mechanical Officials, and National Fire Protection Association.

(8) "State building code" means the codes adopted by and referenced in chapter 19.27 RCW; the state energy code; and any other codes so designated by the Washington state legislature as adopted and amended by the council.

(9) "Statewide amendment" means any amendment to the model codes, initiated through council action or by petition to the council from any agency, city or county, or interested individual or organization, that would have the effect of amending the building code for the entire state of Washington. Statewide amendments to the state building code must be adopted in accordance with the Administrative Procedure Act, chapter 34.05 RCW.

(10) "State building code update cycle" means that period during which the model code and standards referenced in chapter 19.27 RCW are updated and amended by the council in accordance with the Administrative Procedure Act, chapter 34.05 RCW hereinafter referred to as the "adoption period" and those additional periods when code changes are received for review as proposed amendments to the model codes, hereinafter referred to as "submission periods."

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-015, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.031, 19.27.074 and 19.27.035. WSR 17-03-123, § 51-04-015, filed 1/18/17, effective 2/18/17. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 05-23-104, § 51-04-015, filed 11/17/05, effective 1/1/06. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-107, § 51-04-015, filed 12/17/03, effective 7/1/04. Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 98-24-077, § 51-04-015, filed 12/1/98, effective 7/1/99. Statutory Authority: RCW 19.27.074. WSR 98-02-048, § 51-04-015, filed 1/5/98, effective 7/1/98. Statutory Authority: RCW 19.27.035 and chapter 34.05 RCW. WSR 94-05-058, § 51-04-015, filed 2/10/94, effective 3/13/94.

Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-015, filed 1/3/90, effective 2/3/90.]

WAC 51-04-018 Petition for preliminary review. An agency, city or county, wishing to submit local government residential amendments to the building code for council consideration, may file with the council a petition for preliminary review of the local government residential amendment, in order to solicit comments from council members and interested parties, prior to council action.

The council may refer a petition for preliminary review to one of the council standing committees for review and comment.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-018, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.035 and chapter 34.05 RCW. WSR 94-05-058, § 51-04-018, filed 2/10/94, effective 3/13/94. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-018, filed 1/3/90, effective 2/3/90.]

WAC 51-04-020 Rules for the consideration of proposed statewide amendments. (1) All petitions for statewide amendments to the building code must be compliant with the requirements set forth in WAC 51-04-025.

(2) The council will accept and consider compliant petitions for emergency statewide amendments to the building code at any time, in accordance with RCW 19.27.074 and chapter 34.05 RCW.

(3) The council will accept and consider compliant petitions for statewide amendments that are submitted within the time periods the council posts for petitions relating to Group 1 and Group 2 amendments to be made in conjunction with the state building code update cycle.

(a) For the purpose of review and adoption of new model code editions and statewide amendment submission, the state building code shall be divided into two groups as follows, unless otherwise directed by the council:

(i) Group 1: International Building Code (IBC); International Existing Building Code (IEBC); International Fire Code (IFC) Washington state energy code-commercial (WSEC-C) and Wildland Urban Interface Code (WUI).

(ii) Group 2: International Residential Code (IRC); International Mechanical Code (IMC); International Fuel Gas Code (IFGC); standards liquefied petroleum gas are National Fire Protection Association (NFPA) standards 58 and 54; Uniform Plumbing Code (UPC); Washington state energy code-residential (WSEC-R).

(b) During August of the year before the year of the model code edition, the council will post a timeline for Group 1 and Group 2 code update processes, including providing separate periods of at least sixty days for the submission of petitions for statewide amendments for each group the council reserves the right to modify its timeline as it determines necessary and appropriate.

(c) The timeline shall include deadlines for committee transmittal to council of separate reports for Group 1 and Group 2 that identify:

(i) The significant changes contained in the new model codes from the prior model codes;

(ii) The existing state amendments to prior model codes that are proposed to be modified or eliminated; and

(iii) All committee proposed amendments to the new model codes. The reports shall be posted on the council website.

(d) The council shall direct council staff to submit a CR-102 to the code reviser's office containing any proposed rules that the council has approved and shall conduct at least two public hearings for each group (one in western Washington and one in eastern Washington) following the filing of the proposed rules with the code reviser's office.

(e) Upon completion of the council's review of Group 1 amendments (not including Group 1 amendments the council directs be kept open for consideration during the Group 2 period), the council will commence review of Group 2 amendments following the timeline.

(4) The council will accept and consider compliant petitions for all other statewide amendments to the state building code if one or more of the following criteria are met:

(a) The amendment is directed by the legislature;

(b) The amendment is necessary for code correlation, correction of errors, language clarification, or section update; or

(c) The council determines that the amendment would serve a critical public interest and requires immediate/accelerated action.

(5) The council shall review proposed new statewide amendments, and approve those meeting the appropriate criteria to file as proposed rules in accordance with chapter 34.05 RCW. The proposed rules filing shall include a small business economic impact statement in accordance with chapter 19.85 RCW.

(6) The code development period shall conclude with formal adoption of the state building code as amended by the council. As required by RCW 19.27.074, all decisions to adopt or amend the state building code shall be made prior to December 1st and shall not take effect before the end of the regular legislative session in the next year.

Provided, the December 1st deadline shall not apply to emergency rules or expedited adoption of rules under the Administrative Procedure Act, chapter 34.05 RCW.

(7) State amendments as approved by the council shall be submitted to the appropriate model code organization, at the direction of the council, except those adopted for consistency with state statutes or regulation and held for further review during the adoption period of those model codes by the council.

[Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 21-01-049, § 51-04-020, filed 12/8/20, effective 1/8/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-020, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.031, 19.27.074 and 19.27.035. WSR 17-03-123, § 51-04-020, filed 1/18/17, effective 2/18/17. Statutory Authority: RCW 19.27.035, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 07-15-043, § 51-04-020, filed 7/13/07, effective 8/13/07. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 05-23-104, § 51-04-020, filed 11/17/05, effective 1/1/06. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-107, § 51-04-020, filed 12/17/03, effective 7/1/04. Statutory Authority: RCW 19.27.035 and chapter 34.05 RCW. WSR 94-05-058, § 51-04-020, filed 2/10/94, effective 3/13/94. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-020, filed 1/3/90, effective 2/3/90; Order 76-02, § 51-04-020, filed 9/1/76.]

WAC 51-04-025 Procedure for submittal of proposed statewide amendments. (1) Statewide and emergency statewide amendments to the state building code shall conform to the purposes, objectives, and standards prescribed in RCW 19.27.020.

Applications for proposed statewide amendments shall be complete, include a detailed economic analysis of impacts of the proposed statewide amendment and be submitted in writing to the council, on the form provided by the council. The amendment must address existing model code language; a change in the model codes since a previous edition; or an existing state or local amendment to the model code; or a portion of the state code other than the model code. The state building code council shall consider the action of the model code organizations in their consideration of these proposals.

Statewide and emergency statewide amendments to the state building code shall be based on one of the following criteria:

(a) The amendment is needed to address a critical life/safety need.

(b) The amendment clarifies the intent or application of the code.

(c) The amendment is necessary for consistency with state or federal laws and regulations.

(d) The amendment corrects errors and omissions.

(e) The amendment eliminates an obsolete, conflicting, duplicating or unnecessary regulation.

(2) Petitions for statewide amendments to the building code shall be submitted to the council during the submission period and the adoption period in accordance with WAC 51-04-020. Minimum requirements specified on the form for submittals must be included. Incomplete submittals will be held for thirty days and the proponent will be notified with a request for more information. If after thirty days, the applicant has not provided requested information for a complete application, the proponent's proposal will be deemed incomplete and shall not move forward.

(3) Petitions for emergency statewide amendments to the building code may be submitted at any time, in accordance with RCW 19.27.074 and chapter 34.05 RCW, and WAC 51-04-015 and 51-04-020.

The council may refer a proposed statewide amendment to one of the council standing committees for review and comment prior to council action in accordance with chapter 34.05 RCW.

(4) The council shall consider and take action on all proposed statewide amendments within the time frames required by chapter 19.27 RCW, RCW 34.05.330, and all other deadlines established by statute.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-025, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.031, 19.27.074 and 19.27.035. WSR 17-03-123, § 51-04-025, filed 1/18/17, effective 2/18/17. Statutory Authority: RCW 19.27.035, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 07-15-043, § 51-04-025, filed 7/13/07, effective 8/13/07. Statutory Authority: RCW 19.27.035 and chapter 34.05 RCW. WSR 94-05-058, § 51-04-025, filed 2/10/94, effective 3/13/94. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-025, filed 1/3/90, effective 2/3/90.]

WAC 51-04-030 Policies for consideration of proposed local government residential amendments. (1) All amendments to the building

code, as adopted by cities and counties for implementation and enforcement in their respective jurisdictions, that apply to single and multifamily buildings as defined by RCW 19.27.015, shall be submitted to the council for approval.

(2) The council shall consider and approve or deny all proposed local government residential amendments to the state building code as presented to the council within ninety calendar days of receipt of a proposal, unless alternative scheduling is agreed to by the council and the proposing entity. Where a proposed local government residential amendment is modified upon adoption by the city or county legislative body, it shall be resubmitted to the council. Local government residential amendments shall not be effective until approved by the council and the local governing authority.

(3) All local government residential amendments to the building code that require council approval shall be submitted in writing to the council, by the authorized local code or elected official, prior to implementation and enforcement of the amendment by the local jurisdiction. All local amendments submitted for review shall be accompanied by findings of fact justifying the adoption of the local amendment in accordance with the five criteria noted below in this section.

(4) It is the policy of the council to encourage joint proposals for local government residential amendments from more than one jurisdiction. Local government residential amendments submitted to the council for approval shall be based on:

(a) Climatic conditions that are unique to the jurisdiction.

(b) Geologic or seismic conditions that are unique to the jurisdiction.

(c) Environmental impacts such as noise, dust, etc., that are unique to the jurisdiction.

(d) Life, health, or safety conditions that are unique to the local jurisdiction.

(e) Other special conditions that are unique to the jurisdiction.

EXCEPTION: Local government residential amendments to administrative provisions (departmental operational procedures) contained within the state building code need not be submitted to the council for review and approval provided that such amendments do not alter the construction requirements of those chapters.

(5) Appendices to the codes that affect single and multifamily residential buildings as defined by RCW 19.27.015 that are not adopted by the council shall be submitted to the council for consideration as local government residential amendments to the building code.

Local government residential amendments shall conform to the limitations provided in RCW 19.27.040.

[Statutory Authority: RCW 19.27.031, 19.27.074 and 19.27.035. WSR 17-03-123, § 51-04-030, filed 1/18/17, effective 2/18/17. Statutory Authority: RCW 19.27.035, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 07-15-043, § 51-04-030, filed 7/13/07, effective 8/13/07. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 05-23-104, § 51-04-030, filed 11/17/05, effective 1/1/06. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-07-193, § 51-04-030, filed 3/24/04, effective 7/1/04. Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 98-24-077, § 51-04-030, filed 12/1/98, effective 7/1/99. Statutory Authority: Chapter 19.27 RCW. WSR 95-01-127, § 51-04-030, filed 12/21/94, effective 6/30/95. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-030, filed 1/3/90, effective 2/3/90.]

WAC 51-04-035 Procedure for submittal of proposed local government residential amendments. All proposed local government residential amendments to the state building code shall be submitted in writing to the council, on a form provided by the council, along with findings of fact as required in WAC 51-04-030 for the proposed amendment. Local government residential amendments to administrative provisions (departmental operational procedures) contained within the state building code need not be submitted to the council for review and approval provided that such amendment does not affect the construction requirements of those chapters.

The council shall accept and consider all applications for review of local government residential amendments submitted to the council in a proper manner.

The council may refer a proposed local government residential amendment to one of the council standing committees for review and comment prior to council action in accordance with RCW 19.27.074.

[Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 05-23-104, § 51-04-035, filed 11/17/05, effective 1/1/06. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-035, filed 1/3/90, effective 2/3/90.]

WAC 51-04-037 Preapproved local government residential amendments. Any local government residential amendment, that the council determines to be appropriate for adoption by other local governments, may be designated as a preapproved local government residential amendment.

A preapproved local government residential amendment may be adopted by any local government upon notification of the council.

[Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-037, filed 1/3/90, effective 2/3/90.]

WAC 51-04-040 Reconsideration. (1) When the council approves, denies or modifies a local amendment to the building code, any party with written or oral testimony to the council related to the amendment on the record may file a petition for reconsideration. The petition must be received by the Washington State Building Code Council, 1500 Jefferson Avenue S.E., P.O. Box 41449, Olympia, Washington 98504-1449, within twenty calendar days of the council action on the amendment. The petition must give specific reasons for why the council should reconsider the amendment for approval or denial.

(2) Within sixty calendar days of receipt of a timely petition for reconsideration, the council shall in writing:

(a) Grant the petition for reconsideration;

(b) Deny the petition for reconsideration, giving reasons for the denial; or

(c) Request additional information and extend the time period for not more than thirty calendar days to either grant or deny the petition for reconsideration.

(3) The council's denial of a local government amendment, or the council denial of a petition for reconsideration under this section, is subject to judicial review under chapter 34.05 RCW.

[Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 21-01-049, § 51-04-040, filed 12/8/20, effective 1/8/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-040, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.031, 19.27.074 and 19.27.035. WSR 17-03-123, § 51-04-040, filed 1/18/17, effective 2/18/17. Statutory Authority: RCW 19.27.074. WSR 16-01-042, § 51-04-040, filed 12/9/15, effective 1/9/16. Statutory Authority: RCW 19.27.035, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 07-15-043, § 51-04-040, filed 7/13/07, effective 8/13/07. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 05-23-104, § 51-04-040, filed 11/17/05, effective 1/1/06. Statutory Authority: RCW 19.27.035 and chapters 19.27 and 34.05 RCW. WSR 02-01-113, § 51-04-040, filed 12/18/01, effective 7/1/02. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-040, filed 1/3/90, effective 2/3/90.]

WAC 51-04-050 Ex parte communications. All written communications related to council business received by council members shall be forwarded to staff for inclusion in the public record.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-050, filed 12/2/19, effective 1/2/20. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-050, filed 1/3/90, effective 2/3/90.]

WAC 51-04-060 Opinions. RCW 19.27.031 grants the council authority to render opinions relating to the building code at the request of a local code official.

For the purposes of this section, the term "code official" means the local or state official, or their designee, responsible for implementation and enforcement of the specific code provision on which the opinion is requested.

At the request of a code official, the council will issue opinions relating to the codes adopted under chapters 19.27, 19.27A, and 70.92 RCW, and council amendments to the model codes. At the request of a local code official, the council may issue opinions on the applicability of WAC 51-04-030 to a local government ordinance regulating construction.

Council related opinions may be developed and approved by a standing committee of the council.

Opinions approved by a standing committee may be reviewed and modified by the council.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-060, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.035, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 07-15-043, § 51-04-060, filed 7/13/07, effective 8/13/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-107, § 51-04-060, filed 12/17/03, effective 7/1/04. Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 98-24-077, § 51-04-060, filed 12/1/98, effective 7/1/99. Statutory Authority: RCW 19.27.035 and chapter 34.05 RCW. WSR 94-05-058, § 51-04-060, filed 2/10/94, effective 3/13/94. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-060, filed 1/3/90, effective 2/3/90.]

WAC 51-04-070 Council mailing address. All requests for information, documentation, etc., should be submitted to:

Washington State Building Code Council
1500 Jefferson Avenue S.E.
P.O. Box 41449
Olympia, Washington 98504-1449
Phone: 360-407-9255
www.sbcc.wa.gov

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 19-24-078, § 51-04-070, filed 12/2/19, effective 1/2/20. Statutory Authority: RCW 19.27.074. WSR 16-01-042, § 51-04-070, filed 12/9/15, effective 1/9/16. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 05-23-104, § 51-04-070, filed 11/17/05, effective 1/1/06. Statutory Authority: RCW 19.27.074. WSR 98-02-048, § 51-04-070, filed 1/5/98, effective 7/1/98. Statutory Authority: Chapters 19.27 and 34.05 RCW and 1989 c 348. WSR 90-02-108, § 51-04-070, filed 1/3/90, effective 2/3/90.]

Chapter 51-52 WAC
STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2018 EDITION OF THE INTERNATIONAL MECHANICAL CODE

(Formerly chapter 51-42 WAC)

Last Update: 2/8/21

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

51-52-21404	Section 404—Piping system installation. [Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-21404, filed 12/17/03, effective 7/1/04.] Repealed by WSR 07-01-092, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW.

WAC 51-52-001 Authority. These rules are adopted under the authority of chapter 19.27 RCW.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-001, filed 12/17/03, effective 7/1/04.]

WAC 51-52-002 Purpose. The purpose of these rules is to implement the provisions of chapter 19.27 RCW, which provides that the state building code council shall maintain the State Building Code in a status which is consistent with the purpose as set forth in RCW 19.27.020. In maintaining the codes the council shall regularly review updated versions of the codes adopted under the act, and other perti-

nent information, and shall amend the codes as deemed appropriate by the council.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-002, filed 12/17/03, effective 7/1/04.]

WAC 51-52-003 International Mechanical Code. The 2018 edition of the *International Mechanical Code* published by the International Code Conference is hereby adopted by reference with the exceptions noted in this chapter of the Washington Administrative Code (WAC).

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-003, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-003, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-003, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-003, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-003, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-003, filed 12/17/03, effective 7/1/04.]

WAC 51-52-004 Conflict between International Mechanical Code and State Energy Code chapter 51-11C WAC. In the case of conflict between the duct sealing or insulation requirements of Section 603 or Section 604 of this code and the duct sealing or insulation requirements of chapter 51-11C WAC, the Washington State Energy Code, or where applicable, a local jurisdiction's energy code, the provisions of such energy codes shall govern.

[Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-004, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-004, filed 12/17/03, effective 7/1/04.]

WAC 51-52-005 Reserved.

[Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-005, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-005, filed 12/17/03, effective 7/1/04.]

WAC 51-52-007 Exceptions. The exceptions and amendments to the International Mechanical Code contained in the provisions of chapter 19.27 RCW shall apply in case of conflict with any of the provisions of these rules.

The provisions of this code do not apply to temporary growing structures used solely for the commercial production of horticultural plants including ornamental plants, flowers, vegetables, and fruits. "Temporary growing structure" means a structure that has the sides and roof covered with polyethylene, polyvinyl, or similar flexible synthetic material and is used to provide plants with either frost pro-

tection or increased heat retention. A temporary growing structure is not considered a building for purposes of this code.

Codes referenced which are not adopted through RCW 19.27.031 or chapter 19.27A RCW shall not apply unless specifically adopted by the authority having jurisdiction.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-007, filed 12/17/03, effective 7/1/04.]

WAC 51-52-008 Implementation. The International Mechanical Code adopted by chapter 51-52 WAC shall become effective in all counties and cities of this state on July 1, 2020.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-008, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-008, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-008, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-008, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-008, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-008, filed 12/17/03, effective 7/1/04.]

WAC 51-52-0101 Section 101—General.

101.2 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*. References in this code to Group R shall include Group I-1, Condition 2 assisted living facilities licensed by Washington state under chapter 388-78A WAC and Group I-1, Condition 2 residential treatment facilities licensed by Washington state under chapter 246-337 WAC.

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 2017 Edition of NFPA 58 (Liquefied Petroleum Gas Code) and the 2018 Edition of ANSI Z223.1/NFPA 54 (National Fuel Gas Code).

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0101, filed 1/8/20, effective 7/1/20. Statutory Authority: RCW 19.27.031, 19.27.074, and chapters 19.27 and 34.05 RCW. WSR 17-17-159, § 51-52-0101, filed 8/23/17, effective 10/1/17. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0101, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0101, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0101, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW.

WSR 07-01-092, § 51-52-0101, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-0101, filed 12/17/03, effective 7/1/04.]

WAC 51-52-0102 Section 102—Applicability. Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 17-10-075, § 51-52-0102, filed 5/3/17, effective 6/3/17; WSR 16-01-148, § 51-52-0102, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0102, filed 2/1/13, effective 7/1/13.]

WAC 51-52-0202 Section 202—General definitions.

BALANCED WHOLE HOUSE VENTILATION. Any combination of concurrently operating residential unit mechanical exhaust and mechanical supply whereby the total mechanical exhaust airflow rate is within 10 percent or 5 cfm, whichever is greater, of the total mechanical supply airflow rate. Intermittent dryer exhaust, intermittent range hood exhaust, and intermittent toilet room exhaust airflow rates above the residential dwelling or sleeping unit minimum ventilation rate are exempt from the balanced airflow calculation.

DISTRIBUTED WHOLE HOUSE VENTILATION. A whole house ventilation system shall be considered distributed when it supplies outdoor air directly (not transfer air) to each dwelling or sleeping unit habitable space, (living room, den, office, interior adjoining spaces or bedroom), and exhausts air from all kitchens and bathrooms directly outside.

LOCAL EXHAUST. An exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a residential dwelling or sleeping unit.

PERMANENT CONSTRUCTION. Construction that, if removed, would disturb the structural integrity of the building or the fire-resistance rating of a building assembly.

RELIEF AIR. Exhausted return air from a system that provides ventilation for human usage.

REPLACEMENT AIR. Outdoor air that is used to replace air removed from a building through an exhaust system. Replacement air may be derived from one or more of the following: Makeup air, supply air, transfer air, and infiltration. However, the ultimate source of all replacement air is outdoor air. When replacement air exceeds exhaust, the result is exfiltration.

WHOLE HOUSE VENTILATION SYSTEM. A mechanical ventilation system, including fans, controls, and ducts, which replaces, by direct means, air from the habitable rooms with *outdoor air*.

VENTILATION ZONE. Any indoor area that requires ventilation and comprises one or more spaces with the same occupancy category (see Table 403.3.1.1), occupant density, zone air distribution effectiveness (see Section 403.3.1.1.1.2), and design zone primary airflow per unit area.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0202, filed 1/8/20, effective 7/1/20; WSR 16-01-148, §

51-52-0202, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0202, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0202, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0202, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-0202, filed 12/17/03, effective 7/1/04.]

WAC 51-52-0301 Section 301—Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0301, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0301, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0301, filed 2/1/13, effective 7/1/13.]

WAC 51-52-0306 Section 306—Access and service space.

306.5 Equipment and appliances on roofs or elevated structures. Where equipment requiring access or appliances are located on an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade to access such equipment or appliances, an interior or exterior means of access shall be provided. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) in height or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33 percent slope). Such access shall not require the use of portable ladders. Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall.

Permanent ladders installed to provide the required access shall comply with the following minimum design criteria:

1. The side railing shall extend above the parapet or roof edge not less than 42 inches (1067 mm).

2. Ladders shall have rung spacing not to exceed 12 inches (305 mm) on center. The uppermost rung shall be a maximum of 24 inches below the upper edge of the roof hatch, roof or parapet, as applicable.

3. Ladders shall have a toe spacing not less than 7 inches (178 mm) deep.

4. There shall be a minimum of 18 inches (457 mm) between rails.

5. Rungs shall have a minimum 0.75-inch (19 mm) diameter and be capable of withstanding a 300-pound (136.1 kg) load.

6. Ladders over 30 feet (9144 mm) in height shall be provided with offset sections and landings capable of withstanding 100 pounds (488.2 kg/m^2) per square foot. Landing dimensions shall be not less than 18 inches and not less than the width of the ladder served. A guardrail shall be provided on all open sides of the landing.

7. Climbing clearances. The distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be a minimum of 30 inches measured perpendicular to the rungs. This distance shall be maintained from the point of ladder access to the bottom of the roof hatch. A minimum clear width of 15 inches shall be provided on both sides of the ladder measured from the

midpoint of and parallel with the rungs except where cages or wells are installed.

8. Landing required. The ladder shall be provided with a clear and unobstructed bottom landing area having a minimum dimension of 30 inches by 30 inches centered in front of the ladder.

9. Ladders shall be protected against corrosion by approved means.

10. Access to ladders shall be provided at all times.

Catwalks installed to provide the required access shall be not less than 24 inches (610 mm) wide and shall have railings as required for service platforms.

EXCEPTION: This section shall not apply to Group R-3 occupancies.

306.6 Appliances above ceilings. Appliances that are located above the ceiling shall have ready access for inspection, service and repair without removing *permanent construction*. Appliances shall be provided with access to panel or removable ceiling tile with minimum nominal dimensions of 24 inches by 24 inches (609 mm x 609 mm).

The appliance is not required to be removable or replaceable through the access panel or removable ceiling tile. The appliance may be removed or replaced by removing the ceiling or wall assemblies adjacent to the appliance as long as they *are not permanent construction*.

EXCEPTIONS: 1. This section shall not apply to replacement appliances installed in existing compartments and alcoves where the working space clearances are in accordance with the equipment or appliance manufacturer's installation instructions.
2. A smaller access panel or removable ceiling tile shall be permitted when allowed by the equipment or appliance manufacturer's installation instructions.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0306, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0306, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0306, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0306, filed 1/20/10, effective 7/1/10.]

WAC 51-52-0307 Section 307—Condensate disposal.

307.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 307.2.1, where damage to any building components could occur as a result of overflow from the *equipment* primary condensate removal system, one of the following auxiliary protection methods shall be provided for each cooling coil or fuel-fired *appliance* that produces condensate:

1. An auxiliary drain pan with a separate drain shall be provided under the coils on which condensation will occur. The auxiliary pan drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The pan shall have a minimum depth of 1 1/2 inches (38 mm), shall not be less than 3 inches (76 mm) larger than the unit or the coil dimensions in width and length and shall be constructed of corrosion-resistant material. Galvanized sheet steel pans shall have a minimum thickness of not less than 0.0236 inch (0.6010 mm) (No. 24 gage). Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm).

2. A separate overflow drain line shall be connected to the drain pan provided with the *equipment*. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of

a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection.

3. An auxiliary drain pan without a separate drain line shall be provided under the coils on which condensate will occur. Such pan shall be equipped with a water-level detection device conforming to UL 508 that will shut off the *equipment* served prior to overflow of the pan. The auxiliary drain pan shall be constructed in accordance with Item 1 of this section.

4. A water-level detection device conforming to UL 508 shall be provided that will shut off the *equipment* served in the event that the primary drain is blocked. The device shall be installed in the primary drain line, the overflow drain line, or in the equipment-supplied drain pan, located at a point higher than the primary drain line connection and below the overflow rim of such pan.

EXCEPTIONS: 1. Fuel-fired appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.
2. Unducted fan coil units where there is no factory option available for water-level detection devices and which are installed directly within the occupied space.

307.2.4.1 Ductless mini-split system traps. Ductless mini-split equipment that produces condensate shall be provided with an inline check valve located in the drain line, a trap, or other means of condensate drainage in accordance with the manufacturer's instructions.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0307, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0307, filed 2/1/13, effective 7/1/13.]

WAC 51-52-0401 Section 401—General.

401.2 Ventilation required. Every occupied space other than enclosed parking garages and buildings used for repair of automobiles shall be ventilated in accordance with Section 401.2.1, 401.2.2 or 401.2.3. Enclosed parking garages and buildings used for repair of automobiles shall be ventilated by mechanical means in accordance with Sections 403 and 404.

401.2.1 Group R occupancies. Ventilation in Group R occupancies shall be provided in accordance with Section 403.4.

401.2.2 Ambulatory care facilities and Group I-2 occupancies. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.

401.2.3 All other occupancies. Ventilation in all other occupancies shall be provided by natural means in accordance with Section 402 or by mechanical means in accordance with Sections 403.1 to 403.7.

401.3 When required. Group R occupancies shall be vented continuously or intermittently in accordance with Section 403.4. Ventilation in all other occupancies shall be provided during the periods that the room or space is occupied.

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

1. Intake openings shall be located not less than 10 feet (3048 mm) from lot lines or buildings on the same lot. Lot lines shall not be defined as a separation from a street or public way.

2. Mechanical and gravity outdoor air intake openings shall be located not less than 10 feet (3048 mm) horizontally from any hazard-

ous 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 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.

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.

EXCEPTION: Separation is not required between intake air openings and living space environmental air exhaust air openings of an individual dwelling unit or sleeping unit where a factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions. A minimum of 3 feet (914 mm) separation shall be maintained between other environmental air exhaust outlets and other dwelling or sleeping unit factory-built intake/exhaust combination termination fittings.

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.

EXCEPTION: Enclosed parking garage and repair garage ventilation air intakes are permitted to be located less than 10 feet horizontally from or 25 feet vertically above a street, alley, parking lot, and loading dock.

401.7 Testing and balancing. At the discretion of the building official, flow testing may be required to verify that the mechanical system(s) satisfies the requirements of this chapter. Flow testing may be performed using flow hood measuring at the intake or exhaust points of the system, in-line pitot tube, or pitot-traverse type measurement systems in the duct, short term tracer gas measurements, or other means approved by the building official.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0401, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0401, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0401, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0401, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.020, 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 05-01-015, § 51-52-0401, filed 12/2/04, effective 7/1/05.]

WAC 51-52-0403 Section 403—Mechanical ventilation.

403.1 Ventilation system. Mechanical ventilation shall be provided by a method of supply air and return or *exhaust air*. The amount of supply air shall be approximately equal to the amount of return and *exhaust air*. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with Chapter 6.

403.2 Outdoor air required. The minimum *outdoor airflow rate* shall be determined in accordance with Section 403.3.

EXCEPTIONS: 1. Where the registered design professional demonstrates that an engineered ventilation system design will prevent the maximum concentration of contaminants from exceeding that obtainable by the rate of *outdoor air* ventilation determined in accordance with Section 403.3, the minimum required rate of *outdoor air* shall be reduced in accordance with such engineered system design.
2. Alternate systems designed in accordance with ASHRAE Standard 62.1 Section 6.2, Ventilation Rate Procedure, shall be permitted.

403.2.1 Recirculation of air. The air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3

shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:

1. Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.

2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces where 10 percent or more of the resulting supply airstream consists of air recirculated from these spaces.

3. Where mechanical exhaust is required by Note b in Table 403.3.1.1, recirculation of air from such spaces shall be prohibited. All air supplied to such spaces shall be exhausted, including any air in excess of that required by Table 403.3.1.1.

4. Where mechanical exhaust is required by Note g in Table 403.3.1.1, mechanical exhaust is required and recirculation from such spaces is prohibited where more than 10 percent of the resulting supply airstream consists of air recirculated from these spaces. Return air from such spaces shall only be permitted to be recirculated when returned to an energy recovery ventilation system complying with Section 514. Recirculation of air that is contained completely within such spaces shall not be prohibited.

403.3 Outdoor air and local exhaust airflow rates. Group R occupancies shall be provided with outdoor air and local exhaust in accordance with Section 403.4. All other buildings intended to be occupied shall be provided with outdoor air and local exhaust in accordance with Section 403.3.1.

403.3.1.1 Outdoor airflow rate. Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with this section. In each occupiable space, the ventilation system shall be designed to deliver the required rate of outdoor airflow to the breathing zone. Outdoor air shall be supplied directly to each occupiable space from an air handling unit through a fully ducted path or ducted to within 12 inches of the return air opening of a fan-powered terminal unit used to transfer the outdoor air to the occupiable space. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3.1.1. Ventilation rates for occupancies not represented in Table 403.3.1.1 shall be those for a listed occupancy classification that is most similar in terms of occupant density, activities and building construction; or shall be determined by an approved engineering analysis. The ventilation system, including transfer fan-powered terminal units shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.

With the exception of smoking lounges, the ventilation rates in Table 403.3.1.1 are based on the absence of smoking in occupiable spaces. Where smoking is anticipated in a space other than a smoking lounge, the ventilation system serving the space shall be designed to provide ventilation over and above that required by Table 403.3.1.1 in accordance with accepted engineering practice.

EXCEPTION: Where occupancy density is known and documented in the plans, the outside air rate may be based on the design occupant density. Under no circumstance shall the occupancies used result in outside air less than one-half that resulting from application of Table 403.3.1.1 estimated maximum occupancy rates.

Table 403.3.1.1

REQUIRED OUTDOOR VENTILATION AIR

Occupancy Classification	Occupant Density #/1000 ft^{2a}	People Outdoor Airflow Rate in Breathing Zone R_p cfm/Person	Area Outdoor Airflow Rate in Breathing Zone R_a cfm/ft^{2a}	Exhaust Airflow Rate cfm/ft^{2a}
Offices				
Conference rooms	50	5	0.06	—
Kitchenettes[k]	25	5	0.06	0.30
Office spaces	5	5	0.06	—
Reception areas	30	5	0.06	—
Telephone/data entry	60	5	0.06	—
Main entry lobbies	10	5	0.06	—
Private dwellings, single and multiple				
Garages, common for multiple units[b]	—	—	—	0.75
Living areas[c]		See Table 403.4.2	—	See Table 403.4.7 —
Toilet rooms, bathrooms and laundry areas[g, i]	—	—		See Table 403.4.7
Public spaces				
Corridors serving other than Group R occupancies	—	—	0.06	—
Corridors serving Group R dwelling or sleeping units with whole house exhaust system	—	—	0.12	—
Corridors serving Group R dwelling or sleeping units with other than whole house exhaust system	—	—	0.06	—
Courtrooms	70	5	0.06	—
Elevator car	—	—	—	1
Elevator lobbies in parking garage	—	—	1.0	—
Legislative chambers	50	5	0.06	—
Libraries	10	5	0.12	—
Museums (children's)	40	7.5	0.12	—
Museums/galleries	40	7.5	0.06	—
Places of religious worship	120	5	0.06	—
Shower room (per showerhead)[g]	—	—	—	50/20[f]
Smoking lounges[b]	70	60	—	—
Toilet rooms—Public[g]	—	—	—	50/70[e]
Sports and amusement				
Disco/dance floors	100	20	0.06	—
Bowling alleys (seating areas)	40	10	0.12	—
Game arcades	20	7.5	0.18	—
Ice arenas, without combustion engines[j]	—	—	0.30	0.5
Gym, stadium, arena (play area)[j]	—	—	0.30	—
Spectator areas	150	7.5	0.06	—
Swimming pools (pool and deck area)	—	—	0.48	—
Health club/aerobics room	40	20	0.06	—
Health club/weight room	10	20	0.06	—
Storage				
Janitor closets, trash rooms, recycling rooms	—	—	—	1.0
Repair garages, enclosed parking garage[b, d]	—	—	—	0.75
Storage rooms, chemical	—	—	—	1.5
Warehouses	—	—	0.06	—
Workrooms				

Occupancy Classification	Occupant Density #/1000 ft²[a]	People Outdoor Airflow Rate in Breathing Zone R_p cfm/Person	Area Outdoor Airflow Rate in Breathing Zone R_a cfm/ft²[a]	Exhaust Airflow Rate cfm/ft²[a]
Bank vaults/safe deposit	5	5	0.06	—
Darkrooms	—	—	—	1.0
Copy, printing rooms	4	5	0.06	0.5
Freezer and refrigerated spaces (<50°F)	0	10	0	0
Meat processing[c]	10	15	—	—
Pharmacy (prep. area)	10	5	0.18	—
Photo studios	10	5	0.12	—
Computer (without printing)	4	5	0.06	—

For SI: 1 cubic foot per minute = 0.0004719 m^3/s, 1 ton = 908 kg, 1 cubic foot per minutes per square foot = 0.00508 $m^3/(s•m^2)$, °C = [(°F) -32]/1.8, 1 square foot - 0.0929 m^2.

a. Based upon *net occupiable floor area*.
b. Mechanical exhaust required and the recirculation of air from such spaces is prohibited. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Item 3).
c. Spaces unheated or maintained below 50°F are not covered by these requirements unless the occupancy is continuous.
d. Ventilation systems in enclosed parking garages shall comply with Section 404.
e. Rates are per water closet or urinal. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
f. Rates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
g. Mechanical exhaust is required and recirculation from such spaces is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more than 10 percent air recirculated from these spaces. Return air from such spaces only be permitted to be recirculated when returned to an energy recovery ventilation system complying with Section 514. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Items 2 and 4).
h. For nail salons, each manicure and pedicure station shall be provided with a *source capture system* capable of exhausting not less than 50 cfm per station. Exhaust inlets shall be located in accordance with Section 502.20. Where one or more required source capture systems operate continuously during occupancy, the exhaust rate from such systems shall be permitted to be applied to the exhaust flow rate required by Table 403.3.1.1 for the nail salon.
i. A laundry area within a kitchen or bathroom is not required to have local exhaust. For the laundry area to qualify as being within the kitchen, the laundry room door must open directly into the kitchen and not into an adjacent corridor. Where there are doors that separate the laundry area from the kitchen or bathroom the door shall be louvered.
j. When combustion equipment is intended to be used on the playing surface, additional dilution ventilation and/or source control shall be provided.
k. Kitchenettes require exhaust when they contain a domestic cooking appliance range or oven that is installed in accordance with Table 507.2.1. Kitchenettes that only contain a microwave cooking appliance are not required to have exhaust. A kitchenette may not contain commercial cooking appliances that require Type I or Type II exhaust as these occupancies are required to be exhausted to the kitchen category in Table 403.3.1.1.

403.3.1.1.2.3 Multiple zone recirculating systems. For ventilation systems wherein one or more air handlers supply a mixture of outdoor air and recirculated air to more than one ventilation zone, the outdoor air intake flow (V_{ot}) shall be determined in accordance with Sections 403.3.1.1.2.3.1 through 403.3.1.1.2.3.4.

403.3.1.1.2.3.1 Uncorrected outdoor air intake. The uncorrected outdoor air intake flow (V_{ot}) shall be determined in accordance with Equation 4-5.

$$V_{ou} = D\sum_{all\ zones}(R_p \times P_z) + \sum_{all\ zones}(R_a \times A_z) \quad \textbf{(Equation 4-5)}$$

403.3.1.1.2.3.1.1 Occupant diversity. The occupant diversity ratio (D) shall be determined in accordance with Equation 4-6 to account for variations in population within the ventilation zones served by the system.

$$D = P_s/\sum_{all\ zones}P_z \quad \textbf{(Equation 4-6)}$$

where:

P_s = System population: The total population in the area served by the system.

EXCEPTION: Alternative methods to account for occupant diversity shall be permitted, provided the resulting V_{ou} value is no less than that determined using Equation 4-5.

403.3.1.1.2.3.1.2 Design system population. Design system population (P_s) shall equal the largest (peak) number of people expected to occupy all ventilation zones served by the ventilation system during use.

Note: Design system population is always equal to or less than the sum of design zone population for all zones in the area served by the system because all zones may or may not be simultaneously occupied at design population.

403.3.1.1.2.3.2 System ventilation efficiency. The system ventilation efficiency (E_v) shall be determined in accordance with Section 403.3.1.1.2.3.3 for the Simplified Procedure or Appendix A of ASHRAE 62.1 for the Alternative Procedure.

Note: These procedures also establish zone minimum primary airflow rates for VAV systems.

403.3.1.1.2.3.3 Simplified procedure.

403.3.1.1.2.3.3.1 System ventilation efficiency. System ventilation efficiency (E_v) shall be determined in accordance with Equation 4-6a or 4-6b.

$$E_V = 0.88 \times D + 0.22 \text{ for } D < 0.60 \quad \textbf{(Equation 4-6a)}$$

$$E_V = 0.75 \text{ for } D \geq 0.60 \quad \textbf{(Equation 4-6b)}$$

403.3.1.1.2.3.3.2 Zone minimum primary airflow. For each zone, the minimum primary airflow ($V_{pz\text{-}min}$) shall be determined in accordance with Equation 4-7.

$$V_{pz\text{-}min} = V_{oz} \times 1.5 \quad \textbf{(Equation 4-7)}$$

403.3.1.1.2.3.4 Outdoor air intake. The design outdoor air intake flow (V_{ot}) shall be determined in accordance with Equation 4-8.

$$V_{ot} = V_{ou}/E_V \quad \textbf{(Equation 4-8)}$$

403.3.2 Group R-2, R-3 and R-4 occupancies. This section is not adopted. See Section 403.4.

403.3.2.1 Outdoor air for dwelling units. This section is not adopted.

403.3.2.2 Outdoor air for other spaces. This section is not adopted.

403.3.2.3 Local exhaust. This section is not adopted.

403.4 Group R whole house mechanical ventilation system. Each dwelling unit or sleeping unit shall be equipped with a whole house mechanical ventilation system that complies with Sections 403.4.1 through 403.4.6. Each dwelling unit or sleeping unit shall be equipped with local exhaust complying with Section 403.4.7. All occupied spaces, including public corridors, other than the Group R dwelling units and/or sleeping units, that support these Group R occupancies shall meet the ventilation requirement of natural ventilation requirements of Section 402 or the mechanical ventilation requirements of Sections 403.1 through 403.3.

System design. The whole house ventilation system shall con- sist of one or more supply fans, one or more exhaust fans, or an ERV/HRV with integral fans; and the associated ducts and controls. Lo- cal exhaust fans shall be permitted to serve as part of the whole house ventilation system when provided with the proper controls in accordance with Section 403.4.5. The systems shall be designed and in-

stalled to supply and exhaust the minimum outdoor airflow rates per Section 403.4.2 as corrected by the balanced and/or distributed whole house ventilation system coefficients in accordance with Section 403.4.3 where applicable.

Table 403.4.2
WHOLE HOUSE MECHANICAL VENTILATION AIRFLOW RATE (CONTINUOUSLY OPERATING SYSTEMS)

Floor Area (ft^2)	Bedrooms[1]				
	1	2	3	4	>5
<500	30	30	35	45	50
500 - 1000	30	35	40	50	55
1001 - 1500	30	40	45	55	60
1501 - 2000	35	45	50	60	65
2001 - 2500	40	50	55	65	70
2501 - 3000	45	55	60	70	75
3001 - 3500	50	60	65	75	80
3501 - 4000	55	65	70	80	85
4001 - 4500	60	70	75	85	90
4501 - 5000	65	75	80	90	95

[1] Minimum airflow (Q_r) is set at not less than 30 cfm for each dwelling units.

403.4.2 Whole house mechanical ventilation rates. The sleeping unit whole house mechanical ventilation minimum outdoor airflow rate shall be determined in accordance with the breathing zone ventilation rates minimum outdoor airflow rate shall be determined in accordance with the breathing zone ventilation rates requirements of Section 403.3.1.1.1.2 using Equation 4-2. The dwelling unit whole house mechanical ventilation minimum outdoor airflow rate shall be determined in accordance with Equation 4-10 or Table 403.4.2.

$$Q_r = 0.01*A_{floor} + 7.5*(N_{br} + 1)$$ **(Equation 4-10)**

where:

Q_r = Ventilation airflow rate, cubic feet per minute (cfm) but not less than 30 cfm for each dwelling unit.

A_{floor} = Conditioned floor area, square feet (ft^2)

N_{br} = Number of bedrooms, not less than one.

Table 403.4.3
SYSTEM COEFFICIENT (C_{system})

System Type	Distributed	Not Distributed
Balanced	1.0	1.25
Not Balanced	1.25	1.5

403.4.3 Ventilation quality adjustment. The minimum whole house ventilation rate from Section 403.4.2 shall be adjusted by the system coefficient in Table 403.4.3 based on the system type not meeting the definition of a balanced whole house ventilation system and/or not meeting the definition of a distributed whole house ventilation system.

$$Q_v = Q_r * C_{system}$$ **(Equation 4-11)**

where:

Q_v = Quality-adjusted ventilation airflow rate in cubic feet per minute (cfm)

Q_r = Ventilation airflow rate, cubic feet per minute (cfm) from Equation 4-10 or Table 403.4.1

C_{system} = System coefficient from Table 403.4.3

403.4.4 Whole house ventilation residential occupancies. Residential dwelling and sleeping unit whole house ventilation systems shall meet the requirements of Sections 403.4.4.1 or 403.4.4.2 depending on the occupancy of the residential unit.

403.4.4.1 Whole house ventilation in Group R-2 occupancies. Residential dwelling and sleeping units in Group R-2 occupancies system shall include supply and exhaust fans and be a balanced whole house ventilation system in accordance with Section 403.4.6.3. The system shall include a heat or energy recovery ventilator with a sensible heat recovery effectiveness as prescribed in Section C403.3.6 of the *Washington State Energy Code*. The whole house ventilation system shall operate continuously at the minimum ventilation rate determined in accordance with Section 403.4. The whole house supply fan shall provide ducted outdoor ventilation air to each habitable space within the residential unit.

403.4.4.2 Whole house ventilation for other than Group R-2 occupancies. Residential dwelling and sleeping units in other than Group R-2 occupancies, including I-1 condition 2 occupancies, shall have a whole house mechanical ventilation system with supply and exhaust fans in accordance with Section 403.4.6.1, 403.4.6.2, 403.4.6.3, or 403.4.6.4. The whole house ventilation system shall operate continuously at the minimum ventilation rate determined in accordance with Section 403.4.2 unless configured with intermittent off controls in accordance with Section 403.4.6.5. The whole house supply fan shall provide ducted outdoor ventilation air to each habitable space within the residential unit.

403.4.5 Whole house ventilation controls.

1. The whole house ventilation system shall be controlled with manual switches, timers or other means that provide for automatic operation of the ventilation system that are readily accessible by the occupant;

2. Whole house mechanical ventilation system shall be provided with controls that enable manual override off of the system by the occupant during periods of poor outdoor air quality. Controls shall include permanent text or a symbol indicating their function. Recommended control permanent labeling to include text similar to the following: "Leave on unless outdoor air quality is very poor." Manual controls shall be provided with ready access for the occupant.

EXCEPTION: Central whole house mechanical systems with supply air and/or exhaust that serve more than one dwelling or sleep units are not required to have manual override off controls accessible to the occupant.

3. Whole house ventilation systems shall be configured to operating continuously except where intermittent off controls are provided in accordance with Section 403.4.6.5 and allowed by Section 403.4.4.2.

403.4.6 Whole house ventilation system component requirements. Whole house ventilation supply and exhaust fans specified in this section shall have a minimum efficacy as prescribed in the *Washington State Energy Code*. The fans shall be rated for sound at a maximum of 1.0 sone at design airflow and static pressure conditions. Design and in-

stallation of the system or equipment shall be carried out in accordance with manufacturer's installation instructions.

EXCEPTIONS: 1. Central supply or exhaust fans serving multiple residential units do not need to comply with the maximum fan sone requirements.
2. Interior joining spaces provided with a 30 cfm transfer fan or a 25 square foot permanent opening do not require supply ventilation air directly to the space. Transfer fans shall meet the sone rating above and have whole house ventilation controls in accordance with Section 403.4.5.

403.4.6.1 Exhaust fans. Exhaust fans required shall be ducted directly to the outside in accordance with Section 501.3. Exhaust air outlets shall be designed to limit the pressure difference to the outside to limiting the outlet free area maximum velocity to 500 feet per minute and equipped with backdraft dampers or motorized dampers in accordance with *Washington State Energy Code*. Exhaust fans shall be tested and rated in accordance with HVI 915, HVI 916, and HVI 920. Exhaust fans required in this section may be used to provide local ventilation. Exhaust fans that are designed for intermittent exhaust airflow rates higher than the continuous exhaust airflow rates in Table 403.4.2 shall be provided with occupancy sensors or humidity sensors to automatically override the fan to the high speed airflow rate. The exhaust fans shall be tested and the testing results shall be submitted and posted in accordance with Section 403.4.6.7.

EXCEPTION: Central exhaust fans serving multiple residential units do not need to comply with the HVI testing requirements.

403.4.6.2 Supply fans. Supply fans used in meeting the requirements of this section shall supply outdoor air from intake openings in accordance with Sections 401.4 and 401.5. Intake air openings shall be designed to limit the pressure difference to the outside to limiting the inlet free area maximum velocity to 500 feet per minute and when designed for intermittent off operation shall be equipped with motorized dampers in accordance with the *Washington State Energy Code*. Supply fans shall be tested and rated in accordance with HVI 915, HVI 916, and HVI 920. Where outdoor air is provided to each habitable dwelling unit or sleeping unit by supply fan systems the outdoor air shall be filtered. The filter shall be provided with access for regular maintenance and replacement. The filter shall have a Minimum Efficiency Rating Value (MERV) of at least 8.

EXCEPTION: Central supply fans serving multiple residential units do not need to comply with the HVI testing requirements.

403.4.6.3 Balanced whole house ventilation system. A balanced whole house ventilation system shall include both supply and exhaust fans. The supply and exhaust fans shall have airflow that is within 10 percent of each other. The tested and balanced total mechanical exhaust airflow rate is within 10 percent or 5 cfm, whichever is greater, of the total mechanical supply airflow rate. The flow rate test results shall be submitted and posted in accordance with Section 403.4.6.7. The exhaust fan shall meet the requirements of Section 403.4.6.1. The supply fan shall meet the requirements of Section 403.4.6.2. For R-2 dwelling and sleeping units, the system is required to have balanced whole house ventilation but is not required to have distributed whole house ventilation where the not distributed system coefficient from Table 403.4.3 is utilized to correct the whole house mechanical ventilation rate. The system shall be design and balanced to meet the pressure equalization requirements of Section 501.4. Intermittent dryer exhaust, intermittent range hood exhaust, and intermittent toilet room exhaust airflow rates above the residential dwelling or sleeping unit minimum ventilation rate are exempt from the balanced airflow calculation.

403.4.6.4 Furnace integrated supply. Systems using space condition heating and/or cooling air handler fans for outdoor air supply air distribution are not permitted.

EXCEPTION: Air handler fans shall be permitted that have multi-speed or variable speed supply airflow control capability with a low speed operation not greater than 25 percent of the rated supply air flow capacity during ventilation only operation. Outdoor air intake openings must meet the provisions of Sections 401.4 and 401.5 and must include a motorized damper that is activated by the whole house ventilation system controller. Intake air openings shall be designed to limit the pressure difference to the outside to limiting the inlet free area maximum velocity to 500 ft per min. The motorized damper must be controlled to maintain the outdoor airflow intake airflow within 10 percent of the whole house mechanical exhaust airflow rate. The supply air handler shall provide supply air to each habitable space in the residential unit. The whole house ventilation system shall include exhaust fans in accordance with Section 403.4.6.1 to meet the pressure equalization requirements of Section 501.4. The flow rate for the outdoor air intake must be tested and verified at the minimum ventilation fan speed and the maximum heating or cooling fan speed. The results of the test shall be submitted and posted in accordance with Section 403.4.6.7.

403.4.6.5 Intermittent off operation. Whole house mechanical ventilation systems shall be provided with advanced controls that are configured to operate the system with intermittent off operation and shall operate for a least two hours in each four-hour segment. The whole house ventilation airflow rate determined in accordance with Section 403.4.2 as corrected by Section 403.4.3 shall be multiplied by the factor determined in accordance with Table 403.4.6.5.

Table 403.4.6.5

INTERMITTENT WHOLE HOUSE MECHANICAL VENTILATION RATE FACTORS[a,b]

Run-time Percentage in Each 4-hour Segment	50%	66%	75%	100%
Factor[a]	2	1.5	1.3	1.0

[a] For ventilation system run-time values between those given, the factors are permitted to be determined by interpolation.

[b] Extrapolation beyond the table is prohibited.

403.4.6.6 Testing. Whole house mechanical ventilation systems shall be tested, balanced and verified to provide a flow rate not less than the minimum required by Sections 403.4.2 and 403.4.3. Testing shall be performed according to the ventilation equipment manufacturer's instructions, or by using a flow hood, flow grid, or other airflow measuring device at the mechanical ventilation fan's inlet terminals, outlet terminals or grilles or in the connected ventilation ducts. Where required by the building official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the building official and shall be posted in the residential unit in accordance with Section 403.4.6.7.

403.4.6.7 Certificate. A permanent certificate shall be completed by the mechanical contractor, test and balance contractor or other approved party and posted on a wall in the space where the furnace is located, a utility room, or an *approved* location inside the building. When located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels. The certificate shall list the flow rate determined from the delivered airflow of the whole house mechanical ventilation system as installed and the type of mechanical whole house ventilation system used to comply with Section 403.4.3.

403.4.7 Local exhaust. Bathrooms, toilet rooms and kitchens shall include a local exhaust system. Such local exhaust systems shall have the capacity to exhaust the minimum airflow rate in accordance with Table 403.4.7 and Table 403.3.1.1, including notes. Fans required by this section shall be provided with controls that enable manual override or automatic occupancy sensor, humidity sensor or pollutant sensor controls. An "on/off" switch shall meet this requirement for manual controls. Manual fan controls shall be provided with ready access in the room served by the fan.

Table 403.4.7
MINIMUM EXHAUST RATES

Area to be exhausted	Exhaust Rate	
	Intermittent	Continuous
Kitchens	100 cfm	30 cfm
Bathrooms - Toilet rooms	50 cfm	20 cfm

403.4.7.1 Whole house exhaust controls. If the local exhaust fan is included in a whole house ventilation system in accordance with Section 403.4.6, the exhaust fan shall be controlled to operate as specified in Section 403.4.5.

403.4.7.2 Local exhaust fans. Exhaust fans shall meet the following criteria.

1. Exhaust fans shall be tested and rated in accordance with HVI 915, HVI 916, and HVI 920.

EXCEPTION: Where a range hood or down draft exhaust fan is used for local exhaust for a kitchen, the device is not required to be rated per these standards.

2. Fan airflow rating and duct system shall be designed and installed to deliver at least the exhaust airflow required by Table 403.4.7. The airflows required refer to the delivered airflow of the system as installed and tested using a flow hood, flow grid, or other airflow measurement device. Local exhaust systems shall be tested, balanced and verified to provide a flow rate not less than the minimum required by this section.

3. Design and installation of the system or equipment shall be carried out in accordance with manufacturers' installation instructions.

4. Fan airflow rating and duct system shall be designed and installed to deliver at least the exhaust airflow required by Table 403.4.3.

EXCEPTIONS: 1. An exhaust airflow rating at a pressure of 0.25 in. w.g. may be used, provided the duct sizing meets the prescriptive requirements of Table 403.4.7.2.
2. Where a range hood or down draft exhaust fan is used to satisfy the local ventilation requirements for kitchens, the range hood or down draft exhaust shall not be less than 100 cfm at 0.10 in. w.g.

Table 403.4.7.2
PRESCRIPTIVE EXHAUST DUCT SIZING

Fan Tested cfm at 0.25 inches w.g.	Minimum Flex Diameter	Maximum Length in Feet	Minimum Smooth Diameter	Maximum Length in Feet	Maximum Elbows[a]
50	4 inches	25	4 inches	70	3
50	5 inches	90	5 inches	100	3
50	6 inches	No Limit	6 inches	No Limit	3
80	4 inches[b]	NA	4 inches	20	3
80	5 inches	15	5 inches	100	3
80	6 inches	90	6 inches	No Limit	3

Fan Tested cfm at 0.25 inches w.g.	Minimum Flex Diameter	Maximum Length in Feet	Minimum Smooth Diameter	Maximum Length in Feet	Maximum Elbows[a]
100	5 inches[b]	NA	5 inches	50	3
100	6 inches	45	6 inches	No Limit	3
125	6 inches	15	6 inches	No Limit	3
125	7 inches	70	7 inches	No Limit	3

a. For each additional elbow, subtract 10 feet from length.
b. Flex ducts of this diameter are not permitted with fans of this size.

[Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 21-05-020, § 51-52-0403, filed 2/8/21, effective 3/11/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0403, filed 1/8/20, effective 7/1/20; WSR 17-10-075, § 51-52-0403, filed 5/3/17, effective 6/3/17; WSR 16-01-148, § 51-52-0403, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0403, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031, 19.27.035, 19.27.074, and chapters 19.27 and 34.05 RCW. WSR 12-07-020, § 51-52-0403, filed 3/12/12, effective 4/12/12. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0403, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0403, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.020, 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 05-01-015, § 51-52-0403, filed 12/2/04, effective 7/1/05.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.

WAC 51-52-0404 Section 404—Enclosed parking garages and automobile repair facilities.

404.4 Automobile repair facilities. In buildings used for the repair of automobiles, each repair stall shall be equipped with an exhaust extension duct, extending to the outside of the building. Exhaust extension duct over 10 feet in length shall mechanically exhaust at least 300 cfm. Connecting offices and waiting rooms shall be supplied with conditioned air under positive pressure.

[Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0404, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0404, filed 1/20/10, effective 7/1/10.]

WAC 51-52-0407 Section 407—Ambulatory care facilities and Group I-2 occupancies.

407.1 General. Mechanical ventilation for health care facilities licensed by Washington state shall be designed and installed in accordance with this code and the following provisions of the Washington Administrative Code (WAC):

1. Mechanical ventilation in ambulatory care facilities shall comply with chapter 246-330 WAC.

2. Mechanical ventilation for acute care hospitals shall comply with chapter 246-320 WAC.

3. Mechanical ventilation for nursing homes shall comply with chapter 388-97 WAC.

Mechanical ventilation for unlicensed ambulatory care facilities shall be designed and installed in accordance with this code and ASHRAE 170.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0407, filed 12/21/15, effective 7/1/16.]

WAC 51-52-0501 Section 501—General.

501.3.1 Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:

1. **For ducts conveying explosive or flammable vapors, fumes or dusts:** 30 feet (9144 mm) from the property line; 10 feet (3048 mm) from operable openings into the building; 6 feet (1829 mm) from exterior walls and roofs; 30 feet (9144 mm) from combustible walls and operable openings into the building which are in the direction of the exhaust discharge; 10 feet (3048 mm) above adjoining grade.

2. **For other product-conveying outlets:** 10 feet (3048 mm) from property lines; 3 feet (914 mm) from exterior walls and roofs; 10 feet (3048 mm) from operable openings into the building; 10 feet (3048 mm) above adjoining grade.

3. **For environmental air exhaust other than enclosed parking garage and transformer vault exhaust:** 3 feet (914 mm) from property lines, 3 feet (914 mm) from operable openings into buildings for all occupancies other that Group U, and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious.

EXCEPTIONS:
1. The separation between an air intake and exhaust outlet on a single listed package HVAC unit.
2. Exhaust from environmental air systems other than garages may be discharged into an open parking garage.
3. Except for Group I occupancies, where ventilation system design circumstances require building HVAC air to be relieved, such as during economizer operation, such air may be relieved into an open or enclosed parking garage within the same building.

4. Exhaust outlets serving structures in flood hazard areas shall be installed at or above the elevation required by Section 1613 of the *International Building Code* for utilities and attendant equipment.

5. For enclosed parking garage exhaust system outlets and transformer vault exhaust system outlets: 10 feet (3048 mm) from property lines which separate one lot from another; 10 feet (3048 mm) from operable openings into buildings; 3 feet (914 mm) horizontally from, 10 feet above, or 10 feet below adjoining finished sidewalk.

6. For elevator machinery rooms in enclosed or open parking garages: Exhaust outlets may discharge air directly into the parking garage.

7. For specific systems see the following sections:

7.1. Clothes dryer exhaust, Section 504.4.

7.2. Kitchen hoods and other kitchen exhaust equipment, Sections 506.3.13, 506.4 and 506.5.

7.3. Dust stock and refuse conveying systems, Section 511.2.

7.4. Subslab soil exhaust systems, Section 512.4.

7.5. Smoke control systems, Section 513.10.3.

7.6. Refrigerant discharge, Section 1105.7.

7.7. Machinery room discharge, Section 1105.6.1.

501.4 Pressure equalization. Mechanical exhaust systems shall be sized to remove the quantity of air required by this chapter to be exhausted. The system shall operate when air is required to be exhausted. Where mechanical exhaust is required in a room or space, such space shall be maintained with a neutral or negative pressure. If a greater quantity of air is supplied by a mechanical ventilating supply system than is removed by a mechanical exhaust for a room, adequate means shall be provided for the natural or mechanical exhaust of the excess air supplied. If only a mechanical exhaust system is installed for a room or if a greater quantity of air is removed by a mechanical exhaust system than is supplied by a mechanical ventilating supply system for a room, adequate makeup air consisting of supply air, transfer air or outdoor air shall be provided to satisfy the deficiency. The calculated building infiltration rate shall not be used to satisfy the requirements of this section.

EXCEPTION: Intermittent domestic range exhaust, intermittent domestic dryer exhaust, and intermittent local exhaust systems in R-3 occupancies and dwelling units in R-2 occupancies are excluded from the pressure equalization requirement unless required by Section 504 or Section 505.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0501, filed 1/8/20, effective 7/1/20. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0501, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0501, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0501, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.020, 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 05-01-015, § 51-52-0501, filed 12/2/04, effective 7/1/05.]

WAC 51-52-0504 Section 504—Clothes dryer exhaust.

504.4 Exhaust installation. Dryer exhaust ducts for clothes dryers shall terminate on the outside of the building and shall be equipped with a backdraft damper located where the duct terminates. Dryer exhaust ducts may terminate at exterior wall louvers with openings spaced not less than 1/2-inch in any direction.

Screens shall not be installed at the duct termination. Ducts shall not be connected or installed with sheet metal screws or other fasteners that will obstruct the exhaust flow. Clothes dryer exhaust ducts shall not be connected to a vent connector, vent or chimney. Clothes dryer exhaust ducts shall not extend into or through ducts or plenums.

Domestic dryer exhaust ducts may terminate at a common location where each duct has an independent back-draft damper.

504.10 Common exhaust systems for clothes dryers located in multistory structures. Where a common multistory duct system is designed and installed to convey exhaust from multiple clothes dryers, the construction of the system shall be in accordance with all of the following:

1. The shaft in which the duct is installed shall be constructed and fire-resistance rated as required by the *International Building Code*.

2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 2.

3. Rigid metal ductwork shall be installed within the shaft to convey the exhaust. The ductwork shall be constructed of sheet steel having a minimum thickness of 0.0187 inch (0.4712 mm) (No. 26 gage) and in accordance with SMACNA *Duct Construction Standards*.

4. The ductwork within the shaft shall be designed and installed without offsets.

5. The exhaust fan motor design shall be in accordance with Section 503.2.

6. The exhaust fan motor shall be located outside of the airstream.

7. The exhaust fan shall run continuously, and shall be connected to a standby power source.

8. Exhaust fan operation shall be monitored in an *approved* location and shall initiate an audible or visual signal when the fan is not in operation.

9. Makeup air shall be provided for the exhaust system to maintain the minimum flow for the exhaust fan when the dryers are not operating. Additionally, makeup air shall be provided when required by Section 504.5.

10. A cleanout opening shall be located at the base of the shaft to provide *access* to the duct to allow for cleaning and inspection. The finished opening shall be not less than 12 inches by 12 inches (305 mm by 305 mm).

11. Screens shall not be installed at the termination.

12. The common multistory duct system shall serve only clothes dryers and shall be independent of other exhaust systems.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0504, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0504, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0504, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0504, filed 12/19/06, effective 7/1/07.]

WAC 51-52-0505 Section 505—Domestic kitchen exhaust equipment.

505.1 Domestic systems. Where domestic range hoods and domestic appliances equipped with downdraft exhaust are provided, such hoods and appliances shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls, shall be air tight, shall be equipped with a backdraft damper and shall be independent of all other exhaust systems.

Domestic kitchen exhaust ducts may terminate with other domestic dryer exhaust and residential local exhaust ducts at a common location where each duct has an independent back-draft damper.

Listed and labeled exhaust booster fans shall be permitted when installed in accordance with the manufacturer's installation instructions.

EXCEPTIONS: 1. In other than Group I-1 and I-2, where installed in accordance with the manufacturer's installation instructions and where mechanical ventilation is otherwise provided in accordance with Chapter 4, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.

2. Ducts for domestic kitchen cooking appliances equipped with downdraft exhaust systems shall be permitted to be constructed of Schedule 40 PVC pipe and fittings provided that the installation complies with all of the following:
2.1. The duct shall be installed under a concrete slab poured on grade.
2.2. The underfloor trench in which the duct is installed shall be completely backfilled with sand or gravel.
2.3. The PVC duct shall extend not more than 1 inch (25 mm) above the indoor concrete floor surface.
2.4. The PVC duct shall extend not more than 1 inch (25 mm) above grade outside of the building.
2.5. The PVC ducts shall be solvent cemented.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0505, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0505, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0505, filed 1/20/10, effective 7/1/10.]

WAC 51-52-0506 Section 506—Commercial kitchen hood ventilation system ducts and exhaust equipment.

506.3.2.4 Vibration isolation. A vibration isolation connector for connecting a duct to a fan shall consist of noncombustible packing in a metal sleeve joint of approved design or shall be a coated-fabric flexible duct connector rated for continuous duty at temperature of not less than 1500°F (816°C). Vibration isolation connectors shall be installed only at the connection of a duct to a fan inlet or outlet.

506.3.9 Grease duct cleanout location, spacing and installation.

506.3.9.1 Grease duct horizontal cleanout. Cleanouts located on horizontal sections of ducts shall:

1. Be spaced not more than 20 feet (6096 mm) apart.
2. Be located not more than 10 feet (3048 mm) from changes in direction that are greater than 45 degrees (0.79 rad).
3. Be located on the bottom only where other locations are not available and shall be provided with internal damming of the opening such that grease will flow past the opening without pooling. Bottom cleanouts and openings shall be approved for the application and installed liquid-tight.
4. Not be closer than 1 inch (25.4 mm) from the edges of the duct.
5. Have dimensions of not less than 12 inches by 12 inches (305 mm by 305 mm). Where such dimensions preclude installation, the openings shall be not less than 12 inches (305 mm) on one side and shall be large enough to provide access for cleaning and maintenance.
6. Shall be located at grease reservoirs.

506.3.9.2 Grease duct vertical cleanouts. Where ducts pass vertically through floors, cleanouts shall be provided. A minimum of one cleanout shall be provided on each floor. Cleanout openings shall be not less than 1 1/2 inches (38 mm) from all outside edges of the duct or welded seams.

506.3.11 Grease duct enclosures. A commercial kitchen grease duct serving a Type I hood that penetrates a ceiling, wall, floor or any concealed spaces shall be enclosed from the point of penetration to the outlet terminal. In-line exhaust fans not located outdoors shall be enclosed as required for grease ducts. A duct shall penetrate exterior walls only at locations where unprotected openings are permitted by the *International Building Code*. The duct enclosure shall serve a single grease duct and shall not contain other ducts, piping or wiring systems. Duct enclosures shall be a shaft enclosure in accordance with

Section 506.3.11.1, a field-applied enclosure assembly in accordance with Section 506.3.11.2 or a factory-built enclosure assembly in accordance with Section 506.3.11.3. Duct enclosures shall have a fire-resistance rating of not less than that of the assembly penetrated. The duct enclosure need not exceed 2 hours but shall not be less than 1 hour. Fire dampers and smoke dampers shall not be installed in grease ducts.

EXCEPTION: A duct enclosure shall not be required for a grease duct that penetrates only a nonfire-resistance-rated roof/ceiling assembly.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0506, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0506, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0506, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0506, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0506, filed 12/19/06, effective 7/1/07.]

WAC 51-52-0507 Section 507—Commercial kitchen hoods.

507.1.2 Domestic cooking appliances used for commercial purposes. Domestic cooking appliances utilized for commercial purposes shall be provided with Type I, Type II or residential hoods as required for the type of appliances and processes in accordance with Table 507.1.2 and Sections 507.2 and 507.3. Domestic cooking appliances utilized for domestic purposes shall comply with Section 505.

TABLE 507.1.2

TYPE OF HOOD REQUIRED FOR DOMESTIC COOKING APPLIANCES IN THE FOLLOWING SPACES[a, b]

Type of Space	Type of Cooking	Type of Hood
Church	1. Boiling, steaming and warming precooked food	Type II hood
	2. Roasting, pan frying and deep frying	Type I hood
Community or party room in apartment and condominium	1. Boiling, steaming and warming precooked food	Residential hood[c] or Type II hood[d]
	2. Roasting, pan frying and deep frying	Type I hood
Day care	1. Boiling, steaming and warming precooked food	Residential hood[c] or Type II hood[d]
	2. Roasting, pan frying and deep frying	Type I hood
Dormitory, boarding home, nursing home	1. Boiling, steaming and warming precooked food	Type II hood
	2. Roasting, pan frying and deep frying	Type I hood
Office lunch room	1. Boiling, steaming and warming precooked food	Residential hood[c] or Type II hood[d]
	2. Roasting, pan frying and deep frying	Type I hood

[a] Commercial cooking appliances shall comply with Section 507.2.
[b] Requirements in this table apply to electric or gas fuel appliances only. Solid fuel appliances or charbroilers require Type I hoods.
[c] Residential hood shall ventilate to the outside.
[d] Type II hood required when more than one appliance is used.

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 I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m^3 or less of grease when tested at an exhaust flow rate of 500 cfm in accordance with Section 17 of UL 710B.
2. A Type I hood shall not be required in an R-2 type occupancy with not more than 16 residents.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0507, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0507, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0507, filed 1/20/10, effective 7/1/10.]

WAC 51-52-0515 Section 515—Waste or linen chute venting.

515.1 General. Waste or linen chutes shall be gravity vented per NFPA 82.

EXCEPTION: Waste or linen chutes may be mechanically ventilated by an exhaust fan. The exhaust fan in accordance with *International Building Code* Section 713.13.7.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0515, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0515, filed 12/21/15, effective 7/1/16.]

WAC 51-52-0601 Section 601—General.

601.2 Air movement in egress elements. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

EXCEPTIONS: 1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted provided that each such corridor is directly supplied with *outdoor air* at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of one thousand square feet (93 m^2) or less in area, utilization of corridors for conveying return air is permitted.
4. Incidental air movement from pressurized rooms within health care facilities, provided that the corridor is not the primary source of supply or return to the room.
5. Where such air is part of an engineered smoke control system.
6. Air supplied to corridors serving residential occupancies shall not be considered as providing ventilation air to the dwelling units and sleeping units subject to the following:
6.1 The air supplied to the corridor is one hundred percent outside air; and
6.2 The units served by the corridor have conforming ventilation air independent of the air supplied to the corridor; and
6.3 For other than high-rise buildings, the supply fan will automatically shut off upon activation of corridor smoke detectors installed in accordance with Section 606.2.4; or
6.4 For high-rise buildings, the supply fan will automatically shut off upon activation of the smoke detectors required by *International Fire Code* Section 907.2.12.1 or upon receipt of another approved fire alarm signal. The supply fan is not required to be automatically shut off when used as part of an approved building stairwell or elevator hoistway pressurization system. Corridor smoke detectors shall be installed in accordance with Section 606.2.5.

606.2.4 Corridors serving Group R occupancies in other than high-rise buildings. Corridors that serve Group R occupancies in other than high-rise buildings and that are mechanically ventilated with supply air shall be equipped with smoke detectors spaced in accordance with NFPA 72. The supply fan shall automatically shut off upon activation of the corridor smoke detectors.

EXCEPTION: Corridor smoke detection is not required when air is returned back to the supply fan from the corridor and return air smoke detectors are installed in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances designed to automatically shut off the supply fan.

606.2.5 Corridors serving Group R occupancies in high-rise buildings. Corridors that serve Group R occupancies in high-rise buildings and that are mechanically ventilated with supply air shall be equipped with smoke detectors that are spaced in accordance with NFPA 72 and air supply inlets to the corridor shall be provided with smoke/fire

dampers. The supply inlet smoke/fire dampers shall automatically close upon activation of the corridor smoke detectors.

EXCEPTIONS: 1. Corridor smoke detection is not required to close the supply inlet smoke/fire dampers when the smoke/fire dampers are used as part of an approved building stairwell or elevator hoistway pressurization smoke control system.
2. Corridor smoke detection is not required when air is returned back to the supply fan from the corridor and return air smoke detectors are installed in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances designed to automatically shut off the supply fan.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0601, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0601, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0601, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0601, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-0601, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-0601, filed 12/17/03, effective 7/1/04.]

WAC 51-52-0602 Section 602—Duct construction and installation.

602.1 General. Supply, return, exhaust, relief and ventilation air plenums shall be limited to uninhabited crawl spaces, areas above a ceiling or below the floor, attic spaces and mechanical equipment rooms. Plenums shall be limited to one fire area. Air systems that serve multiple fire areas shall be ducted from the boundary of the fire area served directly to the air-handling equipment. Fuel-fired appliances shall not be installed within a plenum.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0602, filed 12/21/15, effective 7/1/16.]

WAC 51-52-0603 Section 603—Duct construction and installation.

603.5.1 Gypsum ducts. The use of gypsum boards to form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125°F (52°C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. Air ducts formed by gypsum boards shall not be incorporated in air-handling systems utilizing evaporative coolers.

EXCEPTION: In other than Group I-2 occupancies, gypsum boards may be used for ducts that are only used for stairwell or elevator pressurization supply air. The gypsum duct shall not attach directly to the equipment.

[Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0603, filed 1/20/10, effective 7/1/10.]

WAC 51-52-0605 Section 605—Air filters.

605.1 General. Heating and air-conditioning systems shall be provided with approved air filters. Filters shall be installed such that all return air, outdoor air and makeup air is filtered upstream from any heat exchanger or coil. Filters shall be installed in an approved convenient location. Liquid adhesive coatings used on filters shall have a flash point not lower than 325°F (163°C).

EXCEPTION: Cooling coils that are designed, controlled and operated to provide sensible cooling only do not require filtration at the terminal device.

605.4 Particulate matter removal. Particulate matter filters or air cleaners having a minimum efficiency reporting value (MERV) of not less than 6 for ducted air handlers and not less than 4 for ductless mini-split systems shall be provided upstream of all cooling coils or other devices with wetted surfaces through which air is supplied to an occupiable space.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0605, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0605, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0605, filed 2/1/13, effective 7/1/13.]

WAC 51-52-0606 Section 606—Smoke detection systems control.

606.2.1 Return air systems. Smoke detectors shall be installed in return air systems with a design capacity greater than 2,000 cfm (0.9 m^3/s), in the return air duct or plenum upstream of any filters, exhaust air connections, outdoor air connections, or decontamination equipment and appliances.

EXCEPTIONS: 1. Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the International Fire Code. The area smoke detection system shall comply with Section 606.4.
2. Smoke detectors are not required in the air system where all of the air is exhausted and not recirculated back to any portion of the building. Additionally, smoke detectors are not required in the supply system that provides the make-up air for the exhaust system.

606.2.2 Common supply and return air systems. Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than 2,000 cfm (0.9 m^3/s), the return air system shall be provided with smoke detectors in accordance with Section 606.2.1.

EXCEPTION: Individual smoke detectors shall not be required for each fan-powered terminal unit, provided that such units do not have an individual design capacity greater than 2,000 cfm (0.9 m^3/s) and will be shut down by activation of one of the following:
1. Smoke detectors required by Sections 606.2.1 and 606.2.3.
2. An approved area smoke detector system located in the return air plenum serving such units.
3. An area smoke detector system as prescribed in the exception to Section 606.2.1.

In all cases, the smoke detectors shall comply with Sections 606.4 and 606.4.1.

The shut down of fan-powered terminal units may be performed by a building automation system upon activation of smoke detection as described in Section 606.2.2, Exception Items 1, 2, or 3. The building automation system is not required to be listed as a smoke control system and is not required to comply with UL Standard 864: Standard for Control Units and Accessories for Fire Alarm Systems.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-0606, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-0606, filed 1/20/10, effective 7/1/10.]

WAC 51-52-0928 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-0928, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-0928, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW

19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-0928, filed 2/1/13, effective 7/1/13.]

WAC 51-52-1000 Chapter 10—Boilers, water heaters and pressure vessels.

Informational Note: Boilers and pressure vessels are regulated by chapter 70.79 RCW and chapter 296-104 WAC in addition to the requirements of this code.

1001.1 Scope. This chapter shall govern the installation, alteration and repair of boilers, water heaters and pressure vessels.

EXCEPTIONS:
1. Pressure vessels used for unheated water supply.
2. Portable unfired pressure vessels and Interstate Commerce Commission containers.
3. Containers for bulk oxygen and medical gas.
4. Unfired pressure vessels having a volume of 5 cubic feet (0.14 m^3) or less operating at pressures not exceeding 250 pounds per square inch (psi) (1724 kPa) and located within occupancies of Groups B, F, H, M, R, S and U.
5. Pressure vessels used in refrigeration systems that are regulated by Chapter 11 of this code.
6. Pressure tanks used in conjunction with coaxial cables, telephone cables, power cables and other similar humidity control systems.
7. Any boiler or pressure vessel subject to inspection by federal or state inspection programs.

[Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-1000, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-1000, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-1000, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-1000, filed 12/17/03, effective 7/1/04.]

WAC 51-52-1105 Section 1105—Machinery room, general requirements.

1105.6.3 Ventilation rate. For other than ammonia systems, the mechanical ventilation systems shall be capable of exhausting the minimum quantity of air both at normal operating and emergency conditions, as required by Sections 1105.6.3.1 and 1105.6.3.2. The minimum required emergency ventilation rate for ammonia shall be 30 air changes per hour and the room conditions shall be in accordance with IIAR2. Multiple fans or multispeed fans shall be allowed to produce the emergency ventilation rate and to obtain a reduced airflow for normal ventilation.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-1105, filed 1/8/20, effective 7/1/20.]

WAC 51-52-1106 Section 1106—Machinery room, special requirements.

1106.5.2 Emergency ventilation system. An emergency ventilation system shall be provided at the minimum exhaust rate specified in ASHRAE 15 or Table 1106.5.2. Shutdown of the emergency ventilation system shall be by manual means.

Table 1106.5.2
MINIMUM EXHAUST RATES

Refrigerant	Q(m/sec)	Q(cfm)
R32	15.4	32,600

Refrigerant	Q(m/sec)	Q(cfm)
R143A	13.6	28,700
R444A	6.46	13,700
R444B	10.6	22,400
R445A	7.83	16,600
R446A	23.9	50,700
R447A	23.8	50,400
R451A	7.04	15,000
R451B	7.05	15,000
R1234yf	7.80	16,600
R1234ze(E)	5.92	12,600

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-1106, filed 1/8/20, effective 7/1/20.]

WAC 51-52-1107 Section 1107—Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-1107, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-1107, filed 12/21/15, effective 7/1/16.]

WAC 51-52-1200 Chapter 12—Hydronic piping.

1209.5 Thermal barrier required. Radiant floor heating and snow melt systems shall be provided with a thermal barrier in accordance with Sections 1209.5.1 and 1209.5.2. Concrete slab-on-grade, asphalt and paver-system type pavements shall have a minimum of R-10 insulation installed under the area to be snow melted, or R-5 insulation shall be installed under and at the slab edges of the area to be snow melted. The insulation shall be located underneath the snow and ice melt hydronic piping or cable and along all edges of the pavement where the snow and ice melt system is installed in accordance with the snow and ice melt manufacturer's instructions.

1209.5.1 Slab-on-grade installation. Radiant piping utilized in slab-on-grade applications shall be provided with insulating materials installed beneath the piping as required by the *Washington State Energy Code*.

1210.7.6 Expansion tanks. Shutoff valves shall be installed at connections to expansion tanks. A method of draining the expansion tank downstream of the shutoff valve shall be provided.

[Statutory Authority: RCW 19.27.035 and RCW 19.27.074. WSR 21-05-020, § 51-52-1200, filed 2/8/21, effective 3/11/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-1200, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-1200, filed 12/21/15, effective 7/1/16.]

WAC 51-52-1400 Chapter 14—Solar thermal systems.

1402.8.1.2 Rooftop-mounted solar thermal collectors and systems. The roof shall be constructed to support the loads imposed by roof-mounted

solar collectors. Where mounted on or above the roof covering, the collector array, mounting systems and their attachments to the roof shall be constructed of noncombustible materials or fire-retardant-treated wood conforming to the *International Building Code* to the extent required for the type of roof construction of the building to which the collectors are accessory.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-1400, filed 1/8/20, effective 7/1/20.]

WAC 51-52-1500 Chapter 15—Referenced standards. The following referenced standards are added to Chapter 15.

ANSI
UL 60335-2-40

ASHRAE
34-2019 Safety standards for refrigeration systems and designation and classification of refrigerants.

62.2-2016 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings……403.4.11

HVI address:
Home Ventilating Institute
1740 Dell Range Blvd., Suite H, PMB 450
Cheyenne, WY 82009

HVI 915-2015 Procedure for Loudness Testing of Residential Fan Products. 403.4.6.1, 403.4.6.2, 403.4.7.2

HVI 916-2015 Air Flow Test Procedure. 403.4.6.1, 403.4.6.2, 403.4.7.2

HVI 920-2015 Product Performance Certification Procedure Including Verification and Challenge. 403.4.6.1, 403.4.6.2, 403.4.7.2

[Statutory Authority: RCW 19.27.035 and RCW 19.27.074. WSR 21-05-020, § 51-52-1500, filed 2/8/21, effective 3/11/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-1500, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-1500, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-1500, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-1500, filed 1/20/10, effective 7/1/10.]

WAC 51-52-21000 International Fuel Gas Code.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-21000, filed 12/17/03, effective 7/1/04.]

WAC 51-52-21101 Section 101—General.

101.2 Scope. This code shall apply to the installation of fuel gas piping systems, fuel gas utilization equipment, gaseous hydrogen systems and regulated accessories in accordance with Section 101.2.1 through 101.2.5.

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 2014 Edition of NFPA 58 (Liquefied Petroleum Gas Code) and the 2015 Edition of ANSI Z223.1/NFPA 54 (National Fuel Gas Code).

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-01-148, § 51-52-21101, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-21101, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-099, § 51-52-21101, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-21101, filed 12/19/06, effective 7/1/07.]

WAC 51-52-21401 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-21401, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-21401, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-21401, filed 2/1/13, effective 7/1/13.]

WAC 51-52-21601 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-21601, filed 1/8/20, effective 7/1/20; WSR 16-01-148, § 51-52-21601, filed 12/21/15, effective 7/1/16. Statutory Authority: RCW 19.27.031, 19.27.074 and chapters 19.27 and 34.05 RCW. WSR 13-04-053, § 51-52-21601, filed 2/1/13, effective 7/1/13.]

WAC 51-52-22000 National Fuel Gas Code.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-22000, filed 12/17/03, effective 7/1/04.]

WAC 51-52-22006 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-03-041, § 51-52-22006, filed 1/8/20, effective 7/1/20. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-092, § 51-52-22006, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-104, § 51-52-22006, filed 12/17/03, effective 7/1/04.]

Chapter 51-56 WAC
STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2018 EDITION OF THE UNIFORM PLUMBING CODE

Last Update: 12/15/20

WAC

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

51-56-201300 Appendix M—Storm drainage. [Statutory Authority: RCW 19.27.031, 19.27.074. WSR 02-01-114, § 51-56-201300, filed 12/18/01, effective 7/1/02.] Repealed by WSR 04-01-110, filed 12/17/03, effective 7/1/04. Statutory Authority: RCW 19.27.031 and 19.27.074.

WAC 51-56-001 Authority. These rules are adopted under the authority of chapter 19.27 RCW.

[Statutory Authority: RCW 19.27.031, 19.27.074. WSR 02-01-114, § 51-56-001, filed 12/18/01, effective 7/1/02.]

WAC 51-56-002 Purpose. The purpose of these rules is to implement the provisions of chapter 19.27 RCW, which provides that the state building code council shall maintain the State Building Code in a status which is consistent with the purpose as set forth in RCW 19.27.020. In maintaining the codes, the council shall regularly review updated versions of the codes adopted under the act, and other pertinent information, and shall amend the codes as deemed appropriate by the council.

[Statutory Authority: RCW 19.27.031, 19.27.074. WSR 02-01-114, § 51-56-002, filed 12/18/01, effective 7/1/02.]

WAC 51-56-003 Uniform Plumbing Code. The 2018 edition of the Uniform Plumbing Code, including Appendices A, B, and I, published by the International Association of Plumbing and Mechanical Officials, is hereby adopted by reference with the following additions, deletions and exceptions: Provided that chapters 12 and 14 of this code are not adopted. Provided further, that those requirements of the Uniform Plumbing Code relating to venting and combustion air of fuel fired ap-

pliances as found in chapter 5 and those portions of the code addressing building sewers are not adopted.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-003, filed 12/26/19, effective 7/1/20; WSR 16-02-044, § 51-56-003, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-003, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-003, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-003, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-003, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-003, filed 12/18/01, effective 7/1/02.]

WAC 51-56-004 Conflicts between Appendix I and the manufacturer's installation instructions. Where a conflict exists between the provisions of Appendix I and the manufacturer's installation instructions, the conditions of the listing and the manufacturer's installation instructions shall apply.

[Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-004, filed 2/1/13, effective 7/1/13.]

WAC 51-56-007 Exceptions. The exceptions and amendments to the model codes contained in the provisions of chapter 19.27 RCW shall apply in cases of conflict with any of the provisions of these rules.

Codes referenced which are not adopted through RCW 19.27.031 or chapter 19.27A RCW shall not apply unless specifically adopted by the authority having jurisdiction.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-007, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-007, filed 12/18/01, effective 7/1/02.]

WAC 51-56-008 Implementation. The Uniform Plumbing Code adopted by chapter 51-56 WAC shall become effective in all counties and cities of this state on July 1, 2020.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-008, filed 12/26/19, effective 7/1/20; WSR 16-02-044, § 51-56-008, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074 and 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-008, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-008, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-008, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-008, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-008, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0100 Chapter 1—Administration.

102.1 Conflict Between Codes. Delete paragraph.

103.3.1 Certification. State rules and regulations concerning certification shall apply.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-0100, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0100, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-0100, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-0100, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0200 Chapter 2—Definitions.

205.0 Certified Backflow Assembly Tester - A person certified by the Washington state department of health under chapter 246-292 WAC to inspect (for correct installation and approval status) and test (for proper operation), maintain and repair (in compliance with chapter 18.106 RCW) backflow prevention assemblies, devices and air gaps.

210.0 Hot Water - Water at a temperature exceeding or equal to 100°F.

211.0 Insanitary - A condition that is contrary to sanitary principles or is injurious to health.
Conditions to which "insanitary" shall apply include the following:

(1) A trap that does not maintain a proper trap seal.

(2) An opening in a drainage system, except where lawful, that is not provided with an approved liquid-sealed trap.

(3) A plumbing fixture or other waste discharging receptor or device that is not supplied with water sufficient to flush and maintain the fixture or receptor in a clean condition, except as otherwise provided in this code.

(4) A defective fixture, trap, pipe, or fitting.

(5) A trap, except where in this code exempted, directly connected to a drainage system, the seal of which is not protected against siphonage and backpressure by a vent pipe.

(6) A connection, cross-connection, construction, or condition, temporary or permanent, that would permit or make possible by any means whatsoever for an unapproved foreign matter to enter a water distribution system used for domestic purposes.

(7) The foregoing enumeration of conditions to which the term "insanitary" shall apply, shall not preclude the application of that term to conditions that are, in fact, insanitary.

218.0 Plumbing System - Includes all potable water, building supply and distribution pipes, all reclaimed or other alternate source water systems, all rainwater systems, all plumbing fixtures and traps, all drainage and vent pipe(s), and all building drains including their respective joints and connection, devices, receptors, and appurtenances within the property lines of the premises and shall include potable water piping, potable water treating or using equipment, medical gas and medical vacuum systems, and water heaters: Provided, That no certification shall be required for the installation of a plumbing system within the property lines and outside a building.

221.0 Spray Sprinkler Body - The exterior case or shell of a sprinkler incorporating a means of connection to the piping system designed to convey water to a nozzle or orifice.

225.0 Water Heater (consumer electric storage) - A consumer product that uses electricity as the energy source to heat domestic potable water, has a nameplate input rating of twelve kilowatts or less, contains nominally forty gallons but no more than one hundred twenty gallons of rated hot water storage volume, and supplies a maximum hot water delivery temperature less than one hundred eighty degrees Fahrenheit.

Water Heater (mini-tank electric) - A small electric water heater that has a measured storage volume of more than one gallon and a rated storage volume of less than twenty gallons.

Water/Wastewater Utility - A public or private entity, including a water purveyor as defined in chapter 246-290 WAC, which may treat, deliver, or do both functions to reclaimed (recycled) water, potable water, or both to wholesale or retail customers.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-0200, filed 12/26/19, effective 7/1/20; WSR 16-02-044, § 51-56-0200, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-23-094, § 51-56-0200, filed 11/20/13, effective 4/1/14. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0200, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-0200, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0200, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-0200, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-0200, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0300 Chapter 3—General regulations.

301.2.2 Standards. Standards listed or referred to in this chapter or other chapters cover materials which will conform to the requirements of this code, when used in accordance with the limitations imposed in this or other chapters thereof and their listing. Where a standard covers materials of various grades, weights, quality, or configurations, the portion of the listed standard that is applicable shall be used. Design and materials for special conditions or materials not provided for herein shall be permitted to be used by special permission of the authority having jurisdiction after the authority having jurisdiction has been satisfied as to their adequacy in accordance with Section 301.2.

301.3 Alternative Materials and Methods of Construction Equivalency. Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The authority having jurisdiction shall have the authority to approve or disapprove the system, method, or device for the intended purpose. Where the alternate material, design or method of construction is not approved,

the code official shall respond in writing, stating the reasons why the alternative was not approved.

However, the exercise of this discretionary approval by the authority having jurisdiction shall have no effect beyond the jurisdictional boundaries of said authority having jurisdiction. An alternate material or method of construction so approved shall not be considered as in accordance with the requirements, intent or both of this code for a purpose other than that granted by the authority having jurisdiction where the submitted data does not prove equivalency.

310.4 Use of Vent and Waste Pipes. Except as hereinafter provided in Sections 908.0 through 911.0 and Appendix C, no vent pipe shall be used as a soil or waste pipe, nor shall any soil or waste pipe be used as a vent.

312.6 Freezing Protection. No water, soil, or waste pipe shall be installed or permitted outside of a building, in attics or crawl spaces, or in an exterior wall unless, where necessary, adequate provision is made to protect such pipe from freezing. All hot and cold water pipes installed outside the conditioned space shall be insulated to a minimum R-3.

312.7 Fire-Resistant Construction. All pipe penetrating floor/ceiling assemblies and fire-resistance rated walls or partitions shall be protected in accordance with the requirements of the building code.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-0300, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0300, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-0300, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0300, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-0300, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-0300, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0400 Chapter 4—Plumbing fixtures and fixture fittings.

402.5 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls. No water closet or bidet shall be set closer than fifteen (15) inches (381 mm) from its center to any side wall or obstruction nor closer than thirty (30) inches (762 mm) center to center to any similar fixture. The clear space in front of any water closet or bidet shall be not less than twenty-four (24) inches (610 mm). No urinal shall be set closer than twelve (12) inches (305 mm) from its center to any side wall or partition nor closer than twenty-four (24) inches (610 mm) center to center.

EXCEPTIONS:
1. The clear space in front of a water closet, lavatory or bidet in dwelling units and sleeping units shall be not less than 21 inches (533 mm).
2. The installation of paper dispensers or accessibility grab bars shall not be considered obstructions.

405.4 Application. No individual, public or private corporation, firm, political subdivision, government agency, or other legal entity, may, for purposes of use in the state of Washington, distribute, sell, offer for sale, import, install, or approve for installation any plumbing fixtures or fittings unless the fixtures or fittings meet the standards as provided for in this chapter.

407.2 Water Consumption. The maximum water flow rate of faucets shall comply with Section 407.2.1 through 407.2.2.

407.2.1 Maximum Flow Rate. The maximum flow rate for public lavatory faucets shall not exceed 0.5 gpm at 60 psi (1.9 L/m at 414 kPa).

407.2.1.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons (4.54 L) per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons (3.03 L) per minute at 20 psi.

407.2.1.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets, installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings, shall not exceed 0.5 gallons (1.89 L) per minute at 60 psi.

407.2.2 Metering Faucets. Metered faucets shall deliver a maximum of 0.25 gallons (1.0 L) per metering cycle in accordance with ASME A112.18.1/CSA B125.1.

407.4 Metering Valves. Lavatory faucets located in restrooms intended for use by the general public shall be equipped with a metering valve designed to close by spring or water pressure when left unattended (self-closing).

EXCEPTIONS: 1. Where designed and installed for use by persons with a disability.
2. Where installed in day care centers, for use primarily by children under 6 years of age.

408.2 Water Consumption. Showerheads shall meet the maximum flow rate of 1.8 gallons (6.81 L) per minute measured at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

EXCEPTION: Emergency use showers shall be exempt from the maximum water usage rates.

408.2.1 Multiple Showerheads Serving One Shower. When a shower is served by more than one showerhead, including handheld showerheads, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons (6.81 L) per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

408.4 Waste Outlet. Showers shall have a waste outlet and fixture tailpiece not less than two (2) inches (50 mm) in diameter. Fixture tailpieces shall be constructed from the materials specified in Section 701.1 for drainage piping. Strainers serving shower drains shall have a waterway at least equivalent to the area of the tailpiece.

EXCEPTION: In a residential dwelling unit where a 2 inch waste is not readily available and approval of the AHJ has been granted, the waste outlet, fixture tailpiece, trap and trap arm may be 1-1/2 inch when an existing tub is being replaced by a shower sized per Section 408.6(2). This exception only applies where one shower head rated at 2.5 gpm is installed.

408.6 Shower Compartments. Shower compartments, regardless of shape, shall have a minimum finished interior of nine hundred (900) square inches (0.58 m^2) and shall also be capable of encompassing a thirty (30) inch (762 mm) circle. The minimum required area and dimensions shall be measured at a height equal to the top of the threshold and at a point tangent to its centerline. The area and dimensions shall be maintained to a point of not less than seventy (70) inches (1,778 mm) above the shower drain outlet with no protrusions other than the fixture valve or valves, shower head, soap dishes, shelves, and safety grab bars or rails. Fold-down seats in accessible shower stalls shall be permitted to protrude into the thirty (30) inch (762 mm) circle.

EXCEPTIONS: 1. Showers that are designed to comply with ICC/ANSI A117.1.

2. The minimum required area and dimension shall not apply for a shower receptor having overall dimensions of not less than thirty (30) inches (762 mm) in width and sixty (60) inches (1,524 mm) in length.

411.2 Water Consumption. The effective flush volume of all water closets shall not exceed 1.28 gallons (4.8 L) per flush when tested in accordance with ASME A112.19.2/CSA B45.1.

EXCEPTIONS: 1. Water closets located in day care centers, intended for use by young children may have a maximum water use of 3.5 gallons per flush or 13.25 liters per flush.
2. Water closets with bed pan washers may have a maximum water use of 3.5 gallons per flush or 13.25 liters per flush.
3. Blow out bowls, as defined in ANSI/ASME A112.19.2M, Section 5.1.2.3 may have a maximum water use of 3.5 gallons per flush or 13.25 liters per flush.

411.2.1 Dual Flush Water Closets. Dual flush water closets shall comply with ASME A112.19.14. The effective flush volume for dual flush water closets shall be defined as the composite, average flush volume of two reduced flushes and one full flush.

411.2.2 Performance. Water closets installed shall meet or exceed the minimum performance criteria developed for certification of high-efficiency toilets under the WaterSense program sponsored by the U.S. Environmental Protection Agency (EPA).

411.2.3 Flushometer Valve Activated Water Closets. Flushometer valve activated water closets shall have a maximum flush volume of 1.28 gallons (4.8 Lpf) of water per flush in accordance with ASME A112.19.2/CSA B45.1.

412.1 Application. Urinals shall comply with ASME A112.19.2/CSA B45.1, ASME A112.19.19, or CSA B45.5/IAPMO Z124. Wall-mounted urinals shall have an average water consumption not to exceed 0.125 gallons (0.47 L) per flush. Other urinals shall have an average water consumption not to exceed 0.5 gallons (1.89 L) per flush.

414.3 Drainage Connection. Domestic dishwashing machines shall discharge indirectly through an air gap fitting in accordance with Section 807.3 into a waste receptor, a wye branch fitting on the tailpiece of a kitchen sink, or dishwasher connection of a food waste disposer. Commercial dishwashing machines shall discharge indirectly through an air gap.

415.2 Drinking Fountain Alternatives. This section is not adopted. See Building Code chapter 29.

418.3 Location of Floor Drains. Floor drains shall be installed in the following areas:

1. Toilet rooms containing two (2) or more water closets or a combination of one (1) water closet and one (1) urinal, except in a dwelling unit. The floor shall slope toward the floor drains.
2. Laundry rooms in commercial buildings and common laundry facilities in multifamily dwelling buildings.

420.0 Sinks

420.1 Application. Sinks shall comply with ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, or CSA B45.5/IAPMO Z124. Moveable sink systems shall comply with ASME A112.19.12.

420.2 Water Consumption. Sink faucets shall have a maximum flow rate of not more than 2.2 gpm at 60 psi (8.3 L/m at 414 kPa) in accordance with ASME A112.18.1/CSA B125.1.

EXCEPTION: Clinical sinks, laundry trays, service sinks.

420.2.1 Kitchen Faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons (6.81 L) per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons (8.3 L) per minute at 60 psi, and

must default to a maximum flow rate of 1.8 gallons (6.81 L) per minute at 60 psi.

EXCEPTION: Where faucets meeting the maximum flow rate of 1.8 gpm (6.81 L) are unavailable, aerators or other means may be used to achieve reduction.

420.3 Prerinse Spray Valve. Commercial food service prerinse spray valves shall have a maximum flow rate of 1.6 gallons per minute (gpm) at 60 pounds-force per square inch (psi) (6.0 L/m at 414 kPa) in accordance with ASME A112.18.1/CSA B125.1 and shall be equipped with an integral automatic shutoff.

422.0 Minimum Number of Required Fixtures. For minimum number of plumbing fixtures required, see Building Code Chapter 29 and Table 2902.1.

423.0 Landscape Irrigation.

423.1 Spray Sprinkler Body. Spray sprinkler bodies must include an integral pressure regulator and must meet the water efficiency and performance criteria and other requirements of environmental protection agency water sense program product specification for spray sprinkler bodies.

EXCEPTION: Spray sprinkler bodies specifically excluded from the scope of the environmental protection agency water sense program product specification for spray sprinkler bodies.

Sections 422.1 through 422.5 and Table 422.1 are not adopted.

[Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 21-01-125, § 51-56-0400, filed 12/15/20, effective 1/15/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-0400, filed 12/26/19, effective 7/1/20; WSR 17-10-074, § 51-56-0400, filed 5/3/17, effective 6/3/17; WSR 16-02-044, § 51-56-0400, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0400, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-0400, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0400, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-0400, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-0400, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0500 Chapter 5—Water heaters.

501.1 Applicability. The regulations of this chapter shall govern the construction, location, and installation of fuel burning and other types of water heaters heating potable water. The minimum capacity for water heaters shall be in accordance with the first hour rating listed in Table 501.1(2). See the Mechanical Code for combustion air and installation of all vents and their connectors. No water heater shall be hereinafter installed that does not comply with the manufacturer's installation instructions and the type and model of each size thereof approved by the authority having jurisdiction. A list of accepted water heater appliance standards is referenced in Table 501(2). Listed appliances shall be installed in accordance with the manufacturer's installation instructions. Unlisted water heaters shall be permitted in accordance with Section 504.3.2.

TABLE 501.1(2)[1,3]

Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First Hour Rating[2], Gallons	38	49	49	49	62	62	74	62	74	74	74

Notes: [1]The first hour rating is found on the "Energy Guide" label.
[2]Nonstorage and solar water heaters shall be sized to meet the appropriate first hour rating as shown in the table, and shall be capable of delivering hot water at the maximum system demand flow, as calculated in Section 610.0 or Appendix A, as applicable.
[3]For replacement water heaters, see Section 102.4.

501.1.2 Consumer Electric Storage Water Heater Requirements. Consumer electric storage water heaters must have a modular demand response communications port compliant with the March 2018 version of the ANSI/CTA-2045-A communication interface standard, or equivalent and the March 2018 version of the ANSI/CTA-2045-A application layer requirements. The interface standard and application layer requirements required in this subsection are the versions established on March 16, 2018.

EXCEPTIONS: 1. Water heaters manufactured prior to January 1, 2021.
2. Electric storage water heaters other than heat pump type water heaters manufactured prior to January 1, 2022.

501.1.3 Mini-tank Electric Water Heaters. The standby energy consumption of hot water dispensers and mini-tank electric water heaters manufactured on or after January 1, 2010, shall be not greater than 35 watts. Mini-tank electric water heaters shall be tested in accordance with the method specified in the California Code of 39 Regulations, Title 20, section 1604 in effect as of July 26, 2009.

504.1 Location. Water heater installation in bedrooms and bathrooms shall comply with one of the following:

(1) Fuel-burning water heaters may be installed in a closet located in the bedroom or bathroom provided the closet is equipped with a listed, gasketed door assembly and a listed self-closing device. The self-closing door assembly shall meet the requirements of Section 505.1.1. The door assembly shall be installed with a threshold and bottom door seal and shall meet the requirements of Section 505.1.2. All combustion air for such installations shall be obtained from the outdoors in accordance with the International Mechanical Code. The closet shall be for the exclusive use of the water heater.

(2) Water heater shall be of the direct vent type.

505.2 Safety Devices. All storage-type water heaters deriving heat from fuels or types of energy other than gas, shall be provided with, in addition to the primary temperature controls, an over-temperature safety protection device constructed, listed, and installed in accordance with nationally recognized applicable standards for such devices and a combination temperature and pressure relief valve.

506.0 Combustion Air. For issues relating to combustion air, see the Mechanical Code.

Sections 506.1 through 506.9 are not adopted.

Sections 507.6 through 507.9 are not adopted.

507.2 Seismic Provisions. Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strappings shall be at points within the upper one-third and lower one-third of its vertical dimensions. At the lower point, a distance of not less

than four (4) inches (102 mm) shall be maintained from the controls to the strapping.

507.13 Installation in Garages. Appliances in garages and in adjacent spaces that open to the garage and are not part of the living space of a dwelling unit shall be installed so that burners, burner-ignition devices and ignition sources are located not less than eighteen (18) inches above the floor unless listed as flammable vapor ignition resistant.

507.16 Venting of Flue Gases - Delete entire section.

Sections 507.18 through 507.22 are not adopted.

509.0 Venting of Equipment. Delete entire section.

510.0 Sizing of Category I Venting Systems. Delete entire section.

511.0 Direct Vent Equipment. Delete entire section.

[Statutory Authority: RCW 19.27.035 and 19.27.074. WSR 21-01-125, § 51-56-0500, filed 12/15/20, effective 1/15/21. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-0500, filed 12/26/19, effective 7/1/20; WSR 17-10-074, § 51-56-0500, filed 5/3/17, effective 6/3/17; WSR 16-02-044, § 51-56-0500, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0500, filed 2/1/13, effective 7/1/13; WSR 11-05-037, § 51-56-0500, filed 2/8/11, effective 7/1/13; WSR 10-03-101, § 51-56-0500, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0500, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-0500, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-0500, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0600 Chapter 6—Water supply and distribution.

601.1 Applicability. This chapter shall govern the materials, design and installation of *water supply systems*, including backflow prevention devices, assemblies and methods used for backflow prevention.

603.1 General. Cross-connection control shall be provided in accordance with the provisions of this chapter. Devices or assemblies for protection of the public water system must be models approved by the department of health under WAC 246-290-490. The authority having jurisdiction shall coordinate with the local water purveyor where applicable in all matters concerning cross-connection control within the property lines of the premises.

No person shall install any water operated equipment or mechanism, or use any water treating chemical or substance, if it is found that such equipment, mechanism, chemical or substance may cause pollution or contamination of the domestic water supply. Such equipment or mechanism may be permitted only when equipped with an approved backflow prevention device or assembly.

603.2 Approval of Devices or Assemblies. Before any device or assembly is installed for the prevention of backflow, it shall have first been approved by the authority having jurisdiction. Devices or assemblies shall be tested for conformity with recognized standards or other standards acceptable to the authority having jurisdiction. Backflow

prevention devices and assemblies shall comply with Table 603.2, except for specific applications and provisions as stated in Section 603.5.1 through 603.5.21.

All devices or assemblies installed in a potable water supply system for protection against backflow shall be maintained in good working condition by the person or persons having control of such devices or assemblies. Such devices or assemblies shall be tested in accordance with Section 603.4.2 and WAC 246-290-490. If found to be defective or inoperative, the device or assembly shall be replaced or repaired. No device or assembly shall be removed from use or relocated or other device or assembly substituted, without the approval of the authority having jurisdiction.

Testing shall be performed by a Washington state department of health certified backflow assembly tester.

TABLE 603.2
Backflow Prevention Devices, Assemblies and Methods
The following line is deleted from the table:

Device, Assembly or Method	Applicable Standards	Pollution (Low Hazard)		Contamination (High Hazard)		Installation
		Back Siphonage	Back Pressure	Back Siphonage	Back Pressure	
Backflow preventer for carbonated beverage dispensers (two independent check valves with a vent to the atmosphere.)	ASSE 1022	X				Installation includes carbonated beverage machines or dispensers. These devices operate under intermittent or continuous pressure conditions.

603.4.2 Testing. For devices and assemblies other than those regulated by the Washington department of health in conjunction with the local water purveyor for the protection of public water systems, the authority having jurisdiction shall ensure that the premise owner or responsible person shall have the backflow prevention assembly tested by a Washington state department of health certified backflow assembly tester:

(1) At the time of installation, repair or relocation; and

(2) At least on an annual schedule thereafter, unless more frequent testing is required by the authority having jurisdiction.

603.4.9 Prohibited Location. Backflow prevention devices with atmospheric vents or ports shall not be installed in pits, underground or in submerged locations. Backflow preventers shall not be located in any area containing fumes or aerosols that are toxic, poisonous, infectious, or corrosive.

603.5.6 Protection from Lawn Sprinklers and Irrigation Systems. Potable water supplies to systems having no pumps or connections for pumping equipment, and no chemical injection or provisions for chemical injection, shall be protected from backflow by one of the following:

(1) Atmospheric vacuum breaker (AVB).

(2) Pressure vacuum breaker backflow prevention assembly (PVB).

(3) Spill-resistant pressure vacuum breaker (SVB).

(4) Reduced pressure principle backflow prevention assembly (RP).

(5) A double check valve backflow prevention assembly (DC) may be allowed when approved by the water purveyor and the authority having jurisdiction.

603.5.10 Steam or Hot Water Boilers. Potable water connections to steam or hot water boilers shall be protected by an air gap or a reduced pressure principle backflow preventer.

603.5.12 Beverage Dispensers. Potable water supply to carbonators shall be protected by a listed reduced pressure principle backflow preventer as approved by the authority having jurisdiction for the specific use. The backflow preventer shall comply with Section 603.4.3. The piping downstream of the backflow preventer shall not be of copper, copper alloy, or other material that is affected by carbon dioxide.

603.5.14 Protection from Fire Systems. Except as provided under Sections 603.5.14.1 and 603.5.14.2, potable water supplies to fire protection systems that are normally under pressure, including but not limited to standpipes and automatic sprinkler systems, except in one or two family or townhouse residential flow-through or combination sprinkler systems piped in materials approved for potable water distribution systems, shall be protected from back-pressure and back-siphonage by one of the following testable assemblies:

1. Double check valve backflow prevention assembly (DC).
2. Double check detector fire protection backflow prevention assembly.
3. Reduced pressure principle backflow prevention assembly (RP).
4. Reduced pressure detector fire protection backflow prevention assembly.

Potable water supplies to fire protection systems that are not normally under pressure shall be protected from backflow and shall meet the requirements of the appropriate standard(s) referenced in Table 1401.1.

604.14 Plastic Pipe Termination. Plastic water service piping may terminate within a building, provided the connection to the potable water distribution system shall be made as near as is practical to the point of entry and shall be accessible. Barbed insert fittings with hose clamps are prohibited as a transition fitting within the building.

606.5 Control Valve. A control valve shall be installed immediately ahead of each water-supplied appliance and immediately ahead of each slip joint or appliance supply.

Parallel water distribution systems shall provide a control valve either immediately ahead of each fixture being supplied or installed at the manifold, and shall be identified with the fixture being supplied. Where parallel water distribution system manifolds are located in attics, crawl spaces, or other locations not accessible, a separate shutoff valve shall be required immediately ahead of each individual fixture or appliance served.

608.3 Expansion Tanks, and Combination Temperature and Pressure-Relief Valves. A water system provided with a check valve, backflow preventer, or other normally closed device that prevents dissipation of building pressure back into the water main, independent of the type of water used, shall be provided with an approved, listed, and adequately sized expansion tank or other approved device having a similar function to control thermal expansion. Such expansion tank or other approved device shall be installed on the building side of the check valve, backflow preventer, or other device and shall be sized and in-

stalled in accordance with the manufacturer's installation instructions.

EXCEPTION: Instantaneous hot water systems installed in accordance with the manufacturer's installation instructions.

608.5 Discharge Piping. The discharge piping serving a temperature relief valve, pressure relief valve or combination of both shall have no valves, obstructions or means of isolation and be provided with the following:

(1) Equal to the size of the valve outlet and shall discharge full size to the flood level of the area receiving the discharge and pointing down.

(2) Materials shall be rated at not less than the operating temperature of the system and approved for such use or shall comply with ASME A112.4.1.

(3) Discharge pipe shall discharge independently by gravity through an air gap into the drainage system or outside of the building with the end of the pipe not exceeding 2 feet (610 mm) and not less than 6 inches (152 mm) above the ground pointing downwards.

(4) Discharge in such a manner that does not cause personal injury or structural damage.

(5) No part of such discharge pipe shall be trapped or subject to freezing.

(6) The terminal end of the pipe shall not be threaded.

(7) Discharge from a relief valve into a water heater pan shall be prohibited.

EXCEPTION: Where no drainage was provided, replacement water heating equipment shall only be required to provide a drain pointing downward from the relief valve to extend between two (2) feet (610 mm) and six (6) inches (152 mm) from the floor. No additional floor drain need be provided.

609.9 Disinfection of Potable Water System. New or repaired *potable water* systems *shall* be disinfected prior to use where required by the *authority having jurisdiction*. The method to be followed *shall* be that prescribed by the health authority or, in case no method is prescribed by it, the following:

(1) The *pipe* system *shall* be flushed with clean, *potable water* until *potable water* appears at the points of outlet.

(2) The system or parts thereof *shall* be filled with a water-chlorine solution containing not less than 50 parts per million of chlorine, and the system or part thereof *shall* be valved-off and allowed to stand for twenty-four hours; or, the system or part thereof *shall* be filled with a water-chlorine solution containing not less than 200 parts per million of chlorine and allowed to stand for three hours.

(3) Following the allowed standing time, the system *shall* be flushed with clean, *potable water* until the chlorine residual in the water coming from the system does not exceed the chlorine residual in the flushing water.

(4) The procedure *shall* be repeated when a standard bacteriological test for drinking water, performed by a laboratory certified for drinking water in Washington state, shows unsatisfactory results indicating that *contamination* persists in the system.

609.11 Insulation of Potable Water Piping. Domestic water piping within commercial buildings shall be insulated in accordance with Section C403.2.8 and Table C403.2.8 or Section C404.6 of the Washington State Energy Code, as applicable.

610.4 Sizing Water Supply and Distribution Systems. Systems within the range of Table 610.4 may be sized from that table or by the method set forth in Section 610.5.

Listed parallel water distribution systems shall be installed in accordance with their listing.

611.1 Application. Drinking water treatment units shall comply with NSF 42 or NSF 53. Water softeners shall comply with NSF 44. Ultraviolet water treatment systems shall comply with NSF 55. Reverse osmosis drinking water treatment systems shall comply with NSF 58. Drinking water distillation systems shall comply with NSF 62.

The owner of a building that serves potable water to twenty-five or more people at least sixty or more days per year and that installs drinking water treatment units including, but not limited to, the treatment units in Section 611.1, may be regulated (as a Group A public water system) by the Washington state department of health under chapter 246-290 WAC. See Washington state department of health publication 331-488 for guidance.

612.1 General. Where residential fire sprinkler systems are installed, they shall be installed in accordance with the International Building Code or International Residential Code.

Sections 612.2 through 612.7.2 are not adopted.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-0600, filed 12/26/19, effective 7/1/20; WSR 17-10-074, § 51-56-0600, filed 5/3/17, effective 6/3/17; WSR 16-02-044, § 51-56-0600, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-23-094, § 51-56-0600, filed 11/20/13, effective 4/1/14. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0600, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031, 19.27.035, 19.27.074, and chapters 19.27 and 34.05 RCW. WSR 12-07-018, § 51-56-0600, filed 3/12/12, effective 4/12/12. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-101, § 51-56-0600, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0600, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-0600, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-0600, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0700 Chapter 7—Sanitary drainage.

701.2 Drainage Piping. Materials for drainage piping shall be in accordance with one of the referenced standards in Table 701.1 except that:

1. No galvanized wrought-iron or galvanized steel pipe shall be used underground and shall be kept not less than 6 inches (152 mm) above ground.

2. ABS and PVC DWV piping installations shall be installed in accordance with applicable standards in Table 1701.1. Except for individual single family dwelling units, materials exposed within ducts or plenums shall have a maximum flame-spread index of 25 and a maximum smoke developed index of 50, when tested in accordance with ASTM E-84 and UL 723.

3. No vitrified clay pipe or fittings shall be used above ground or where pressurized by a pump or ejector. They shall be kept not less than 12 inches (305 mm) below ground.

4. Copper tube for drainage and vent piping shall have a weight of not less than that of copper drainage tube type DWV.

5. Stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) above ground.

6. Cast-iron soil pipe and fittings shall be listed and tested in accordance with standards referenced in Table 1701.1. Such pipe and fittings shall be marked with country of origin and identification of the original manufacturer in addition to markings required by referenced standards.

Table 703.2

MAXIMUM UNIT LOADING AND MAXIMUM LENGTH OF DRAINAGE AND VENT PIPING

Notes:

1. Excluding trap arm.

2. Except sinks, urinals, and dishwashers - Exceeding 1 fixture unit.

3. Except six-unit traps or water closets.

4. Only four water closets or six-unit traps allowed on a vertical pipe or stack; and not to exceed three water closets or six-unit traps on a horizontal branch or drain.

EXCEPTION: In a single family dwelling addition or alteration where a 4 inch horizontal waste is not readily available four water closets not to exceed 1.6 gpf each may be allowed on a 3 inch horizontal waste when approved by the AHJ.

5. Based on one-fourth inch per foot (20.8 mm/m) slope. For one-eighths of an inch per foot (10.4 mm/m) slope, multiply horizontal fixture units by a factor of 0.8.

6. The diameter of an individual vent shall be not less than one and one-fourth inches (32 mm) nor less than one-half the diameter of the drain to which it is connected. Fixture unit load values for drainage and vent piping shall be computed from Table 702.1 and Table 702.2(b). Not to exceed one-third of the total permitted length of a vent shall be permitted to be installed in a horizontal position. Where vents are increased one pipe size for their entire length, the maximum length limitations specified in this table do not apply. This table is in accordance with the requirements of Section 901.2.

704.3 Commercial Sinks. Except where specifically required to be connected indirectly to the drainage system, or when first approved by the authority having jurisdiction, all plumbing fixtures, drains, appurtenances, and appliances shall be directly connected to the drainage system of the building or premises.

707.4 Location. Each horizontal drainage *pipe shall* be provided with a cleanout at its upper terminal, and each run of piping, that is more than 100 feet (30,480 mm) in total *developed length*, *shall* be provided with a cleanout for each 100 feet (30,480 mm), or fraction thereof, in length of such piping. An additional cleanout *shall* be provided in a drainage line for each aggregate horizontal change of direction exceeding 135 degrees (2.36 rad).

EXCEPTIONS:

1. Cleanouts *shall* be permitted to be omitted on a horizontal *drain* line less than 5 feet (1,524 mm) in length unless such line is serving sinks or urinals.
2. Cleanouts *shall* be permitted to be omitted on a horizontal drainage *pipe* installed on a *slope* of 72 degrees (1.26 rad) or less from the vertical angle (one-fifth bend).
3. Except for the *building drain*, its *horizontal branches*, and urinals, a cleanout *shall* not be required on a *pipe* or piping that is above the floor level of the lowest floor of the *building*.
4. An *approved* type of two-way cleanout fitting, installed inside the *building* wall near the connection between the *building drain* and the *building sewer* or installed outside of a *building* at the lower end of a *building drain* and extended to *grade*, *shall* be permitted to be substituted for an upper terminal cleanout.

707.9 Clearance. Each cleanout in piping 2 inches (50 mm) or less in size *shall* be so installed that there is a clearance of not less than 12 inches (457 mm) in front of the cleanout. Cleanouts in piping exceeding 2 inches (50 mm) *shall* have a clearance of not less than 18 inches (610 mm) in front of the cleanout. Cleanouts in under-floor piping *shall* be extended to or above the finished floor or *shall* be extended outside the *building* where there is less than 18 inches (457 mm) vertical overall, allowing for obstructions such as ducts, beams, and piping, and 30 inches of (762 mm) horizontal clearance from the means of access to such cleanout. No under-floor cleanout *shall* be located exceeding 20 feet (1,524 mm) from an access door, trap door, or crawl hole.

CHAPTER 7, PART II—BUILDING SEWERS

Part II Building Sewers. Delete all of Part II (Sections 713 through 723, and Tables 717.1 and 721.1).

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 17-10-074, § 51-56-0700, filed 5/3/17, effective 6/3/17; WSR 16-02-044, § 51-56-0700, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0700, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-0700, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0700, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031, 19.27.074. WSR 02-01-114, § 51-56-0700, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0800 Chapter 8—Indirect wastes.

[Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-0800, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031, 19.27.074. WSR 02-01-114, § 51-56-0800, filed 12/18/01, effective 7/1/02.]

WAC 51-56-0900 Chapter 9—Vents.

908.2.4 Water Closet. This section is not adopted.

911.1 Circuit Vent Permitted. A maximum of eight fixtures connected to a horizontal branch drain shall be permitted to be circuit vented. Each fixture drain shall connect horizontally to the horizontal branch being circuit vented. The horizontal branch drain shall be classified as a vent from the most downstream fixture drain connection to the most upstream fixture drain connection to the horizontal branch. Given its grease-producing potential, restaurant kitchen equipment shall not be connected to a circuit vented system.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-0900, filed 12/26/19, effective 7/1/20; WSR 16-02-044, § 51-56-0900, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-0900, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-0900, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094,

§ 51-56-0900, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031, 19.27.074. WSR 02-01-114, § 51-56-0900, filed 12/18/01, effective 7/1/02.]

WAC 51-56-1000 Chapter 10—Traps and interceptors.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-1000, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-1000, filed 2/1/13, effective 7/1/13.]

WAC 51-56-1100 Chapter 11—Storm drainage.

1101.4 Material Uses. Pipe, tube, and fittings conveying rainwater shall be of such materials and design as to perform their intended function to the satisfaction of the authority having jurisdiction. Conductors within a vent or shaft shall be of cast iron, galvanized steel, wrought iron, copper, copper alloy, lead, Scheduled 40 ASB DWV, Scheduled 40 PVC DWV, stainless steel 304 or 316L (stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than six (6) inches (152 mm) aboveground), or other approved materials, and changes in direction shall conform to the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with IS 5 and IS 9. Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a maximum flame-spread index of 25 and a maximum smoke-developed index of 50, when tested in accordance with ASTM E-84 and UL 723.

1101.13 Cleanouts. Cleanouts for building storm drains shall comply with the requirements of this section.

1101.13.1 Locations. Rain leaders and conductors connected to a building storm sewer shall have a cleanout installed at the base of the outside leader or outside conductor before it connects to the horizontal drain. Cleanouts shall be placed inside the building near the connection between the building drain and the building sewer or installed outside the building at the lower end of the building drain and extended to grade.

1101.13.2 Cleaning. Each cleanout shall be installed so that it opens to allow cleaning in the direction of flow of the soil or waste or at right angles thereto, and except in the case of wye branch and end-of-line cleanouts, shall be installed vertically above the flow line of the pipe.

1101.13.3 Access. Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes, or extending flush with paving with approved materials and be adequately protected.

1101.13.4 Manholes. Approved manholes may be installed in lieu of cleanouts when first approved by the authority having jurisdiction. The maximum distance between manholes shall not exceed three hundred (300) feet (91.4 m).

The inlet and outlet connections shall be made by the use of a flexible compression joint no closer than twelve (12) inches (305 mm)

to, and not farther than three (3) feet (914 mm) from the manhole. No flexible compression joints shall be embedded in the manhole base.

1105.0 Controlled-Flow Roof Drainage. This section is not adopted.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-1100, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-1100, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-1100, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-1100, filed 12/17/03, effective 7/1/04.]

WAC 51-56-1300 Chapter 13—Health care facilities and medical gas and vacuum systems.

Part II Medical Gas and Vacuum Systems

1303.8 Water Mains for Hospitals. Hospitals shall be provided with not less than two *approved potable water* mains that are installed in such a manner as to prevent the interruption of water service.

1305.3 Minimum Station Outlets/Inlets. Station outlets and inlets for medical gas and medical vacuum systems for facilities licensed or certified by Washington state department of health (DOH) or Washington state department of social and health services (DSHS) shall be provided as listed in chapters 246-320 and 246-330 WAC as required by the applicable licensing rules as applied by DOH construction review services. All other medical gas and medical vacuum systems shall be provided as listed in Table 1305.3.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-1300, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-1300, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-1300, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-1300, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-1300, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-1300, filed 12/18/01, effective 7/1/02.]

WAC 51-56-1400 Chapter 14—Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-1400, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-1400, filed 2/1/13, effective 7/1/13; WSR 10-03-101, § 51-56-1400, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-1400, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-110, § 51-56-1400, filed 12/17/03, effective 7/1/04; WSR 02-01-114, § 51-56-1400, filed 12/18/01, effective 7/1/02.]

WAC 51-56-1500 Chapter 15—Alternate water sources for nonpotable applications.

1501.1 Applicability. The provisions of this chapter and the Washington state department of health shall apply to the construction, alteration, and repair of alternate water source systems for nonpotable applications.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-1500, filed 12/26/19, effective 7/1/20; WSR 16-02-044, § 51-56-1500, filed 12/30/15, effective 7/1/16.]

WAC 51-56-1600 Chapter 16—Nonpotable rainwater catchment systems.

1601.1 Applicability. The provisions of this chapter and the Washington state department of health shall apply to the construction alteration and repair of nonpotable rainwater catch systems.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 20-02-072, § 51-56-1600, filed 12/26/19, effective 7/1/20; WSR 16-02-044, § 51-56-1600, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-23-094, § 51-56-1600, filed 11/20/13, effective 4/1/14. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-1600, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031, 19.27.035, 19.27.074, and chapters 19.27 and 34.05 RCW. WSR 12-07-018, § 51-56-1600, filed 3/12/12, effective 4/12/12. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 10-03-101, § 51-56-1600, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.190, 19.27.020 and chapters 19.27 and 34.05 RCW. WSR 07-01-094, § 51-56-1600, filed 12/19/06, effective 7/1/07.]

WAC 51-56-1700 Chapter 17—Referenced standards.

Referenced Standards.

TABLE 1701.1
Standards for Materials, Equipment, Joints and Connections
Where more than one standard has been listed for the same material or method, the relevant portions of all such standards shall apply.

Add the following standard to those listed in Table 1701.1:

Standard Number	Standard Title	Application
WAC 246-290-490	Washington State Department of Health Cross-connection Control Requirements	Backflow Protection

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-1700, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27A.025, 19.27A.045, and 19.27.074. WSR 13-23-094, § 51-56-1700, filed 11/20/13, effective 4/1/14. Statutory Authority: RCW 19.27.074,

19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, §51-56-1700, filed 2/1/13, effective 7/1/13.]

WAC 51-56-90700 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-90700, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-90700, filed 2/1/13, effective 7/1/13.]

WAC 51-56-90800 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-90800, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-90800, filed 2/1/13, effective 7/1/13.]

WAC 51-56-92000 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 16-02-044, § 51-56-92000, filed 12/30/15, effective 7/1/16. Statutory Authority: RCW 19.27.074, 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-054, § 51-56-92000, filed 2/1/13, effective 7/1/13.]

Snohomish County
Planning and Development Services

3000 Rockefeller Ave., M/S 604
Everett, WA 98201-4046
(425) 388-3311
www.snoco.org

Dave Somers
County Executive

DETERMINATION OF NONSIGNIFICANCE

Proponent: Snohomish County Department of Planning & Development Services
County Administration Building
3000 Rockefeller Avenue, M/S 604
Everett, WA 98201

Description of Proposal: Proposed ordinance to amend the Snohomish County Code titled:

RELATING TO THE REGULATION OF CONSTRUCTION; ADOPTING THE 2018 EDITION OF THE INTERNATIONAL MECHANICAL CODE AS REVISED, THE 2018 EDITION OF THE WASHINGTON STATE ENERGY CODE AS REVISED, THE 2018 EDITION OF THE UNIFORM PLUMBING CODE AS REVISED; AND AMENDING SECTIONS IN CHAPTERS 30.51A, 30.52B, 30.52D AND 30.52E SCC

Proposed amendments:

The proposal would adopt the 2018 edition of the International Mechanical Code (IMC), the 2018 edition of the Washington State Energy Code, and the 2018 edition of the Uniform Plumbing Code (UPC) as amended by the Washington State Building Code Council ("SBCC") and adopted by the Washington State Legislature, and as revised by this ordinance.

This ordinance will amend Title 30 Snohomish County Code (SCC) as follows:

- Amend chapter 30.51A SCC to correct cross-references.
- Amend SCC 30.52B.010 to update for the 218 version of the IMC.
- Amend SCC 30.52D.010 SCC to update for the 2018 version of the Washington State Energy Code.
- Amend SCC 30.52E.010 to update for the 2018 version of the UPC.

Lead Agency: Snohomish County Department of Planning & Development Services

Threshold Determination: The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) **IS NOT** required under RCW 43.21C.030(2)(c). This decision was made after review by Snohomish County of a completed environmental checklist and other information on file with this agency. This information is available for public review upon request.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by April 23, 2021, to the responsible official at the address listed below.

Appeals:
This DNS, together with the subsequent legislative action by the County Council to amend the County Code, may be appealed to the Central Puget Sound Growth Management Hearings Board. **THIS DNS MAY BE APPEALED ONLY WHEN SUCH APPEAL IS COMBINED WITH THE APPEAL OF THE UNDERLYING ACTION PURSUANT TO SCC 30.73.100. THE APPEAL MUST BE FILED WITHIN 60 DAYS OF THE PUBLISHED NOTICE OF THE NOTICE OF ACTION ISSUED SUBSEQUENT TO THE FINAL DECISION BY THE COUNTY.** The Notice of Action describing the final decision by the County to pursue or not pursue the proposed action will be published in the County's paper of record. Any appeal must be filed with the Central Puget Sound Growth Management Hearings Board, at PO Box 40953 Olympia WA 98504-0953 within 60 days following publication in the paper, or as otherwise stated in the Notice of Action or provided by law.

Responsible Official: Michael McCrary
Position/Title: Director, Department of Planning & Development Services
Address: 3000 Rockefeller Avenue, M/S #604
Everett, WA 98201-4046

Michael McCrary
Michael McCrary (Apr 6, 2021 11:54 PDT)

Michael McCrary, Director

For further information, contact Eileen Canola, Planning and Development Services, (425) 262-2253 or eileen.canola@snoco.org. Please include your full name and mailing address in any email comments.

Date Issued: April 9, 2021
Date Published: April 9, 2021

Distribution:
Washington State Department of Ecology
DOE - SEPA register
State Agencies (13)
Puget Sound Clean Air Agency
Snohomish County Assessor
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Snohomish County
Planning and Development Services

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(425) 388-3311
www.snoco.org

Dave Somers
County Executive

SNOHOMISH COUNTY ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Use of Checklist for Nonproject Proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

A. BACKGROUND

1. Name of proposed project: Code amendment project:

RELATING TO THE REGULATION OF CONSTRUCTION; ADOPTING THE 2018 EDITION OF THE INTERNATIONAL MECHANICAL CODE AS REVISED, THE 2018 EDITION OF THE WASHINGTON STATE ENERGY CODE AS REVISED, THE 2018 EDITION OF THE UNIFORM PLUMBING CODE AS REVISED; AND AMENDING SECTIONS IN CHAPTERS 30.51A, 30.52B, 30.52D AND 30.52E SCC

2. Name of applicant: **Snohomish County, Department of Planning & Development Services**

3. Address and phone number of applicant and contact person:

Eileen Canola, Project Manager
3000 Rockefeller, M/S 604
Everett, WA 98201
Phone: (425) 262-2253
E-mail: eileen.canola@snoco.org

4. Date checklist prepared: ***April 5, 2021***

5. Agency requesting checklist**:** ***Snohomish County, Department of Planning & Development Services***

6. Proposed timing or schedule (including phasing, if applicable):
   County Council public hearing: To be determined

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   This proposal is for a nonproject action with no directly related plans for future physical additions, expansions, or activities. In the future, the County will review all project–level proposals not exempted by WAC 197-11-800 or SCC 30.61.035 to ensure consistency with Comprehensive Plan policies, implementation of existing regulations, and compliance with SEPA.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

   None.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

   There currently are no known applications pending for governmental approvals of other proposals directly affecting the property covered by this proposal.

10. List any government approvals or permits that will be needed for your proposal, if known.

    This is a nonproject action proposal. No government approvals or permits are required for this proposal.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information of project description.)

    Description of Proposal:

A. ***This is a nonproject action proposal to amend subtitle 30.5 of the Snohomish County Code (SCC).*** The proposal would: 1) adopt the 2018 editions of the International Mechanical Code (IMC), Washington State Energy Code, and the Uniform Plumbing Code (UPC) as amended by the Washington State Building Code Council ("SBCC") and adopted by the Washington State Legislature, and as revised by this ordinance; and 2) amend chapter 30.51A SCC to correct cross-references.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

This nonproject proposal affects land within the jurisdiction of Snohomish County.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): flat, rolling, hilly, steep slopes, mountainous, other_____.

Lands within the jurisdiction of Snohomish County include a variety of terrain such as flat, rolling, hilly, and steep slopes.

b. What is the steepest slope on the site (approximate percent slope)?

Slopes in excess of 100% can be found within the jurisdiction of Snohomish County.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

A range of soil types are found within the jurisdiction of Snohomish County. This nonproject proposal will not impact agricultural land of long-term commercial significance.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Certain areas within Snohomish County have a history of surface instability associated with periods of heavy rainfall. Other areas have a history of more deep-seated instability associated with landslide activity.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

As a nonproject action, no filling or grading is proposed. Any future site-specific development or land use proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review of any proposed grading or filling activity.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

As a nonproject action, no erosion will occur as a direct result of this proposal. Any future site-specific development or land use proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review of any proposed clearing and construction that might result in erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

As a nonproject action, no impervious surface coverage will occur as a result of this proposal.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

As a nonproject action, no erosion reduction or control measures are proposed or required. Future site-specific development or land use action not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to project level SEPA and regulatory review and would require the implementation of applicable county regulations to reduce or control erosion or other impacts to the earth.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

As a nonproject action, no emissions to air will occur as a result of this proposal.

b. Are there any off site sources of emissions or odor that may affect your proposal? If so, generally describe.

Not Applicable.

c. Proposed measures to reduce or control emissions or other impacts to air, if any.

As a nonproject action, no measures to reduce or control emissions are required or proposed. Future site-specific development or land use action not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to project level SEPA and regulatory review and would require the implementation of applicable county regulations to reduce or control emissions or other impacts to air, if any.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There are several streams, seasonal streams, and bodies of water located within Snohomish County.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

As a nonproject action, this proposal will not require any work in, or adjacent to the described waters. Future site-

specific development or land use action not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to project level SEPA and regulatory review and would require the implementation of applicable county regulations to reduce or control activities near surface water bodies, if any.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

As a nonproject action, no fill or dredge material will be placed or removed from surface water or wetlands.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

As a nonproject action, no surface water withdrawals or diversion will be required.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Not Applicable as this is a nonproject action.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

As a nonproject action, no discharges of waste materials to surface waters will occur as a result of this proposal.

b. Ground:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

As a nonproject action, no groundwater will be withdrawn or discharged.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

As a nonproject action, no waste material will be discharged from septic tanks or other sources as a result of this proposal. Future development or land use actions not exempted by WAC 197-11-800 or SCC 30.61.035 that would

likely result in discharges from stormwater runoff would be subject to project-level SEPA and regulatory review.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

As a nonproject action no runoff will occur as a result of this proposal. Any future site-specific development or land use action proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA and development permit review, which would address runoff management.

2) Could waste materials enter ground or surface waters? If so, generally describe.

As a nonproject action, waste materials will not enter ground or surface waters as a result of this proposal. Any future site-specific development or land use proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to separate SEPA and development permit reviews, which would address the potential of waste materials entering ground or surface waters.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

As a nonproject action, no additional measures are required for this proposal. Any future site-specific development or land use proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA and permit review, which would include the implementation of measures to reduce or control surface, ground, and runoff impacts.

4. Plants

a. Check or circle types of vegetation found on the site:

_X_ deciduous tree: alder, maple, aspen, other
_X_ evergreen tree: fir, cedar, pine, other
_X_ shrubs
_X_ grass
_X_ pasture
_X_ crop or grain
_X_ Orchards, vineyards or other permanent crops
_X_ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
_X_ water plants: water lily, eel grass, milfoil, other
_X_ other types of vegetation

All types of the above vegetation occur in various locations throughout the county.

b. What kind and amount of vegetation will be removed or altered?

As a nonproject action, no vegetation will be removed as a direct result of this proposal. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA evaluation of any proposed vegetation removal or alteration.

c. List threatened or endangered species known to be on or near the site.

U.S Fish and Wildlife Services provides legal listing for ESA species under its jurisdiction.
National Marine Fisheries Service provides legal listing for ESA species under its jurisdiction.
Washington State Department of Fish and Wildlife provides legal listing for ESA species under its jurisdiction.
Washington State Department of Natural Resources provides legal listing of ESA species under its jurisdiction.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

As a nonproject action, no measures to preserve or enhance vegetation are required for this proposal. Any future site-specific development or land use action proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA and permit review, which would include review of any proposed landscaping or measures to preserve or enhance vegetation on the site.

e. List all noxious weeds and invasive species known to be on or near the site.

All types of noxious weeds and invasive species occur in various locations throughout the county.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site:

Examples include:

birds: **hawks, heron**, **eagle**, **songbirds,** other: _____
mammals: **deer**, **bear, elk, beaver**, other: _____
fish: **bass**, **salmon**, **trout**, **herring, shellfish**, other:_____

All of the above animal species may be found in various locations throughout the county.

b. List any threatened or endangered species known to be on or near the site.

U.S Fish and Wildlife Services provides legal listing for ESA species under its jurisdiction.
National Marine Fisheries Service provides legal listing for ESA species under its jurisdiction.

Washington State Department of Fish and Wildlife provides legal listing for ESA species under its jurisdiction.
Washington State Department of Natural Resources provides legal listing of ESA species under its jurisdiction.

c. Is the site part of a migration route? If so, explain.

Yes. Wildlife species do migrate through the county, but as a nonproject action it will not impact migratory species.

d. Proposed measures to preserve or enhance wildlife, if any:

As a nonproject action, no measures to preserve or enhance wildlife are required or proposed. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to preserve or enhance wildlife, if any.

e. List any invasive animal species known to be on or near the site.

All types of invasive animal species occur in various locations throughout the county.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

As a nonproject action, energy will not be consumed.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

As a nonproject action, there will be no impact on solar energy as a result of this proposal.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

As a nonproject action, energy conservation features are not applicable to this project. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to reduce or control energy impacts, if any.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

As a nonproject action, no environmental health hazards will result as a consequence of this proposal.

1) Describe any known or possible contamination at the site from present or past uses.

As a nonproject action, known or possible contamination are not applicable to this project. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include identification of known or possible contamination, if any.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

As a nonproject action, existing hazardous chemicals/conditions are not applicable to this project. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include identification existing hazardous chemicals/conditions, if any.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

As a nonproject action, toxic or hazardous chemicals stored, used, or produced during the project's development or construction, or at any time during the operating life of the project are not applicable to this project. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include a review of toxic or hazardous chemicals stored, used, or produced during the project's development or construction, or at any time during the operating life of the project, if any.

4) Describe special emergency services that might be required.

As a nonproject action, no special emergency services are required by this proposal.

5) Proposed measures to reduce or control environmental health hazards, if any:

As a nonproject action, no measures to reduce or control environmental health hazards are required for this proposal. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to reduce or control environmental health hazards, if any.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, aircraft, other)?

This nonproject action will not be effected by noise.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

This nonproject action will not generate noise.

3) Proposed measures to reduce or control noise impacts, if any:

As a nonproject action, no measures to reduce or control noise impacts are required or proposed. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to reduce or control noise impacts, if any.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Not applicable. This is a nonproject action.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

Not applicable to this nonproject action.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

Not applicable to this nonproject action.

c. Describe any structures on the site.

Not applicable to this nonproject action.

d. Will any structures be demolished? If so, what?

As a nonproject action, no structures will be demolished as a result of this proposal.

e. What is the current zoning classification of the site?

There are a variety of zoning classifications in unincorporated Snohomish County including, but not limited to the following: Light Industrial, Heavy Industrial, Clearview Rural Commercial, General Commercial, Agriculture 10-Acres, Rural 5-Acres, Forestry, R-9600, R-8400, R-7200, Townhouse, and Low Density Multiple Residential.

f. What is the current comprehensive plan designation of the site?

There are a variety of comprehensive plan designations in unincorporated Snohomish County including, but not limited to the following: Rural Residential 5-Acres, Commercial Forest, Rural Industrial, Urban Low Density Residential, Urban Medium Density Residential and Urban High Density Residential.

g. If applicable, what is the current shoreline master program designation of the site?

Not Applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Not Applicable.

i. Approximately how many people would reside or work in the completed project?

As a nonproject action, no people would reside or work on the site as a result of this proposal.

j. Approximately how many people would the completed project displace?

As a nonproject action, no people would be displaced as a result of this proposal.

k. Proposed measures to avoid or reduce displacement impacts, if any:

As a nonproject action, no measures to avoid or reduce displacement impacts are required by this proposal.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

As a nonproject action, no measures to ensure the proposal is compatible with existing and projected land uses and plans are required by this proposal.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

Not Applicable.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle or low-income housing.

As a nonproject action, no housing units would be provided by this proposal.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

As a nonproject action, no housing units would be eliminated by this proposal.

c. Proposed measures to reduce or control housing impacts, if any:

As a nonproject action, no measures to reduce or control impacts to housing are required or proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

As a nonproject action, no structures are proposed.

b. What views in the immediate vicinity would be altered or obstructed?

As a nonproject action, no views will be altered or obstructed as a result of this proposal.

c. Proposed measures to reduce or control aesthetic impacts, if any:

As a nonproject action, no measures to reduce or control aesthetic impacts are required or proposed. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to reduce or control aesthetic impacts, if any.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

As a nonproject action, no light or glare will occur as a result of this proposal.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

As a nonproject action, no light or glare that could be a safety hazard or interfere with views will result from this proposal. Any future site-specific development proposals not exempted by WAC 197-11-800 or SCC 30.61.035 will be subject to a separate SEPA and applicable permit reviews, which will include review of light and glare from the development.

c. What existing off-site sources of light or glare may affect your proposal?

Not applicable. This is a nonproject action.

d. Proposed measures to reduce or control light and glare impacts, if any:

As a nonproject action, no measures to reduce or control light and glare impacts are required or proposed. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to reduce of control light and glare impact, if any.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Hunting, fishing, bird watching and many other recreational opportunities exist throughout Snohomish County.

b. Would the proposed project displace any existing recreational uses? If so, describe.

This nonproject action will not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

As a nonproject action, no measures to reduce or control impacts on recreation are proposed or required. Any future site-specific development proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measures to reduce or control impacts on recreation, including recreation opportunities to be provide by the project or applicant, if any.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

Not applicable to this nonproject action.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

Not applicable to this nonproject action.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Not applicable to this nonproject action.

d. Proposed measure to reduce or control impacts, if any:

As a nonproject action, no measure to reduce or control impacts are proposed or required. Any future site-specific development proposal would be subject to a separate SEPA review, which would include review and implementation of measures to reduce or control impacts, if any.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Various highways and several state routes and local streets service Snohomish County.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Community Transit and Sound Transit provide service within Snohomish County.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

As a nonproject action, no parking spaces are proposed or required. Future development must meet the minimum parking requirements as mandated by Chapter 30.26 of the Snohomish County Code.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

As a nonproject proposal, new transportation improvements are not required or proposed. Future development will be reviewed for impacts to the roadway system and improvements to existing roadways may be required on a project-by-project basis.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Not Applicable to this nonproject action.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

This nonproject action will not directly generate any vehicular trips per day. Any future development or land use proposal w not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA and permit review, which would include review of traffic issues

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Not Applicable to this nonproject action.

h. Proposed measures to reduce or control transportation impacts, if any:

As a nonproject action, no measures to reduce or control transportation are proposed or required. Any future site-specific development or land use action not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA and concurrency review.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

As a nonproject action, this proposal will not directly result in an increased need for public services. Site specific, project actions may affect services such as fire and police. These impacts will be reviewed during the project level permitting of the development.

b. Proposed measures to reduce or control direct impacts on public services, if any.

As a nonproject action, no measures to reduce or control impacts on public services are proposed or required. Any future site-specific development or land use action proposal not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to a separate SEPA review, which would include review and implementation of measure to reduce or control any impacts on public services.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

Not applicable to this nonproject action.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

As a nonproject action, no utilities are proposed or required.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Eileen Canola
Eileen Canola (Apr 6, 2021 11:49 PDT)

Eileen Canola, Project Manager
Senior Planner, Planning and Development Services

Date Submitted: April 6, 2021

OPTIONAL

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent of the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   The proposal will not likely cause any increase in these types of discharges or emissions. As a nonproject action, no direct impacts will likely occur to water or air quality. There will not likely be a direct effect to the production, storage, or release of toxic or hazardous substances; or production of noise.

   Proposed measures to avoid or reduce such increases are:

   As a nonproject action, this proposal is not likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise. Future site-specific land activity not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to project-level environmental analysis and threshold determinations.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   As a nonproject action the proposal is not likely to impact animals, fish, or marine life.

   Proposed measures to protect or conserve plants, animals, fish or marine life are:

   The County's critical areas regulations regulate development in environmentally sensitive areas.

3. How would the proposal be likely to deplete energy or natural resources?

   The proposal would not likely deplete energy or natural resources.

   Proposed measures to protect or conserve energy and natural resources are**:**

   As a nonproject action, this proposal is not likely to deplete energy or natural resources. Future site-specific land activity not exempted by WAC 197-11-800 or

SCC 30.61.035 would be subject to project-level environmental analysis and threshold determinations.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   The proposed code amendments would not likely affect environmentally sensitive areas as vegetation removal is prohibited in critical areas and critical area buffers. As a nonproject action, this proposal is unlikely to directly affect environmentally sensitive areas or areas designated (or eligible or under study) for government protection.

   Proposed measures to protect such resources or to avoid or reduce impacts are:

   The County's critical areas regulations regulate development in environmentally sensitive areas.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

   The proposals are not likely to affect land and shoreline use. The County's Shoreline Management Plan regulates development in the shoreline designations. This proposal does not encourage incompatible land or shoreline uses.

   Proposed measures to avoid or reduce shoreline and land use impacts are:

   For any future site-specific land activity not exempted by WAC 197-11-800 or SCC 30.61.035, County staff would analyze the project specific land use impact implications and potentially require mitigation measures for any identified significant adverse impacts.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   As a nonproject action, this proposal is unlikely to directly increase demands on transportation or public services.

   Proposed measures to reduce or respond to such demand(s) are:

   Future site-specific development or land use activity not exempted by WAC 197-11-800 or SCC 30.61.035 would be subject to project-level environmental analysis and threshold determinations. If needed, mitigation measures to address any increased demands on transportation or public services and utilities would be identified at that time.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

   The proposal does not conflict with any law or requirements to protect the environment.

PlumbingMechanical__DNS with Signature Block

Final Audit Report 2021-04-06

Created:	2021-04-06
By:	Tiffany Kelly (Tiffany.Kelly@co.snohomish.wa.us)
Status:	Signed
Transaction ID:	CBJCHBCAABAAjn2dDMsVebDotxUB9xDX9pR3we3_ssWV

"PlumbingMechanical__DNS with Signature Block" History

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I-Codes - Plumbing-Mech-Energy
Index # - File Name: 1.00010_Amendments-code cross references- Chapter 30.51A.pdf

From: Tran, Jessica
To: Canola, Eileen
Cc: Justice, Trace
Subject: RE: Do we have any updates for Chapter 30.51A - Seismic Hazard Areas or Plumbing, Energy, Mechanical
Date: Tuesday, March 23, 2021 2:13:00 PM

Hi Eileen,

I don't have access to the ASCE7-16. I checked the IBC section 1613 and that is still the seismic section. I maintain that we should not include code sections in the County Code so I went through and crossed out code sections. It would save us time from having to verify and update it every time the code changes. I know Ken and his engineering group also use this section and they notify the building plans examiners when there is a seismic hazard area. You may want to run my suggestion of removing code sections from the County Code by them.

30.51A.020Applicability.

(1) This chapter shall apply to all development applications and actions requiring project permits for any building or structure, excluding single-family and duplex dwellings and their accessory structures, located within a seismic hazard area and assigned to occupancy category I, II, III or IV, and buildings or structures assigned to seismic design categories D, E or F. The occupancy category and seismic design category for a building or structure is determined in accordance with ~~section 1613 of~~ the International Building Code (IBC) and the American Society of Civil Engineers 7 standards.

(2) Seismic design categories are used to determine permissible structural systems, limitations on height and irregularity, those components of the structure that must be designed for seismic resistance, and the types of lateral force analysis that must be performed pursuant to ~~section 1613 of~~ the IBC relating to earthquake loads or ~~chapter 11 of~~ ASCE 7. (Added by Ord. 06-075, Oct. 4, 2006, Eff date Oct. 15, 2006; Amended by Amended Ord. 07-089, Sept. 5, 2007, Eff date Sept. 21, 2007; Amended by Ord. 17-059, Oct. 18, 2017, Eff date Nov. 9, 2017).

30.51A.030Fault setback requirements.

A building or structure assigned to seismic design category D, E or F as defined in ~~Section 1613 of~~ the IBC or ASCE 7 shall not be sited over an identified active fault.

(1) Where a development application or action requiring a project permit for any building or structure is located within a seismic hazard area, the applicant shall provide a geotechnical report consistent with the requirements of ~~section 1803 of~~ the IBC and SCC 30.62B.140. In addition to any other requirements, the geotechnical report shall include adequate horizontal control necessary to identify the closest edge of an identified active fault trace.

(2) Buildings and structures subject to this chapter shall be required to set back 50 feet from the closest edge of an identified active fault as defined in SCC 30.91A.075.

(3) The building official may modify the fault setback requirements of this chapter only when done in accordance with SCC 30.50.126.

30.51A.040Additional information or tests authorized.

The building official may require an applicant to perform additional studies, tests, or site investigation to determine or confirm the specific location of an active fault trace and allow for optimal understanding of on-site and nearby seismic hazards, where needed to implement the requirements of SCC 30.51A.030 or ~~**section 11.8.3 of**~~ ASCE 7.

Sincerely,

Jessica Tran | *Commercial Plans Examiner*
Snohomish County Planning and Development Services
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201
425-262-2937| Jessica.Tran@snoco.org

From: Canola, Eileen <Eileen.Canola@co.snohomish.wa.us>
Sent: Tuesday, March 23, 2021 1:56 PM
To: Tran, Jessica <Jessica.Tran@co.snohomish.wa.us>
Cc: Justice, Trace <Trace.Justice@co.snohomish.wa.us>
Subject: Do we have any updates for Chapter 30.51A - Seismic Hazard Areas or Plumbing, Energy, Mechanical

Any other updates to Chapter 30.51A, or Plumbing, Energy, Mechanical codes besides amending 2015 to 2018 codes?
ch. 30.51A Development in Seismic Hazard Areas | Snohomish County Code

Sometimes the references to certain manuals etc needs updating, but I'm not sure what those are.

Thanks,

Eileen
Eileen Canola, CSBA | Senior Planner
Snohomish County Planning & Development Services
3000 Rockefeller Avenue M/S 604 | Everett, WA 98201

425-262-2253 | eileen.canola@snoco.org

I-Code: Plumbing Mechanical
Index # - File Name: 1.0011_Affidavit-Plumbing Mechanical DNS.pdf

Rec'd PDS 4/14/2021

Everett Daily Herald

Affidavit of Publication

State of Washington }
County of Snohomish } ss

Dicy Sheppard being first duly sworn, upon oath deposes and says: that he/she is the legal representative of the Everett Daily Herald a daily newspaper. The said newspaper is a legal newspaper by order of the superior court in the county in which it is published and is now and has been for more than six months prior to the date of the first publication of the Notice hereinafter referred to, published in the English language continually as a daily newspaper in Snohomish County, Washington and is and always has been printed in whole or part in the Everett Daily Herald and is of general circulation in said County, and is a legal newspaper, in accordance with the Chapter 99 of the Laws of 1921, as amended by Chapter 213, Laws of 1941, and approved as a legal newspaper by order of the Superior Court of Snohomish County, State of Washington, by order dated June 16, 1941, and that the annexed is a true copy of EDH924164 PLUMBING MECH DNS as it was published in the regular and entire issue of said paper and not as a supplement form thereof for a period of 1 issue(s), such publication commencing on 04/09/2021 and ending on 04/09/2021 and that said newspaper was regularly distributed to its subscribers during all of said period.

The amount of the fee for such publication is $99.00.

Dicy Sheppard

Subscribed and sworn before me on this 9th day of April, 2021.

Linda Phillips

Notary Public in and for the State of Washington.

Linda Phillips
Notary Public
State of Washington
My Appointment Expires 08/29/2021

Snohomish County Planning | 14107010
TIFFANY KELLY

Snohomish County
Planning and Development Services
3000 Rockefeller Ave., M/S 604
Everett, WA 98201-4046
(425) 388-3311
www.snoco.org
Dave Somers
County Executive

DETERMINATION OF NONSIGNIFICANCE

Proponent: Snohomish County Department of Planning and Development Services
County Administration Building
3000 Rockefeller Avenue, M/S 604
Everett, WA 98201

Description of Proposal: Proposed ordinance to amend the Snohomish County Code titled:

RELATING TO THE REGULATION OF CONSTRUCTION; ADOPTING THE 2018 EDITION OF THE INTERNATIONAL MECHANICAL CODE AS REVISED, THE 2018 EDITION OF THE WASHINGTON STATE ENERGY CODE AS REVISED, THE 2018 EDITION OF THE UNIFORM PLUMBING CODE AS REVISED; AND AMENDING SECTIONS IN CHAPTERS 30.51A, 30.52B, 30.52D AND 30.52E SCC

Proposed amendments

The proposal would adopt the 2018 edition of the International Mechanical Code (IMC), the 2018 edition of the Washington State Energy Code, and the 2018 edition of the Uniform Plumbing Code (UPC) as amended by the Washington State Building Code Council ("SBCC") and adopted by the Washington State Legislature, and as revised by this ordinance.

This ordinance will amend Title 30 Snohomish County Code (SCC) as follows:

- Amend chapter 30.51A SCC to correct cross-references.
- Amend SCC 30.52B.010 to update for the 218 version of the IMC.
- Amend SCC 30.52D.010 SCC to update for the 2018 version of the Washington State Energy Code.
- Amend SCC 30.52E.010 to update for the 2018 version of the UPC.

Lead Agency: Snohomish County Department of Planning and Development Services

Threshold Determination: The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) IS NOT required under RCW 43.21C.030(2)(c). This decision was made after review by Snohomish County of a completed environmental checklist and other information on file with this agency. This information is available for public review upon request.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by April 23, 2021 to the responsible official at the address listed below.

Appeals:

This DNS, together with the subsequent legislative action by the County Council to amend the County Code, may be appealed to the Central Puget Sound Growth Management Hearings Board. THIS DNS MAY BE APPEALED ONLY WHEN SUCH APPEAL IS COMBINED WITH THE APPEAL OF THE UNDERLYING ACTION PURSUANT TO SCC 30.73.100. THE APPEAL MUST BE FILED WITHIN 60 DAYS OF THE PUBLISHED NOTICE OF THE NOTICE OF ACTION ISSUED SUBSEQUENT TO THE FINAL DECISION BY THE COUNTY. The Notice of Action describing the final decision by the County to pursue or not pursue the proposed action will be published in the County's paper of record. Any appeal must be filed with the Central Puget Sound Growth Management Hearings Board, at PO Box 40953 Olympia WA 98504-0953 within 60 days following publication in the paper, or as otherwise stated in the Notice of Action or provided by law.

For further information, contact Eileen Canola, Planning and Development Services, (425) 262-2253 or

eileen.canola@snoco.org. Please include your full name and mailing address in any email comments.
Date Issued: April 6, 2021
Published: April 9, 2021. EDH924164