Chapter 51-51 WAC

STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2012 EDITION OF THE INTERNATIONAL RESIDENTIAL CODE

WAC

51-51-001 Authority.
51-51-002 Purpose.
51-51-003 International Residential Code.
51-51-007 Exceptions.
51-51-008 Implementation.
51-51-0102 Section R102—Applicability.
51-51-0202 Section R202—Definitions.
51-51-0301 Design criteria.
51-51-0302 Section R302—Fire-resistant construction.
51-51-0303 Section R303—Light, ventilation and heating.
51-51-0311 Section R311—Means of egress.
51-51-0313 Section R313—Automatic fire sprinkler systems.
51-51-0314 Section R314—Smoke alarms.
51-51-0315 Section R315—Carbon monoxide alarms.
51-51-0317 Reserved.
51-51-0322 Section R322—Flood resistant construction.
51-51-0325 Section R325—Adult family homes.
51-51-0326 Section R326—Family home child care.
51-51-0327 Section R327—Protection against radon.
51-51-0328 Section R328—Mezzanines.
51-51-0403 Section R403—Footings.
51-51-0404 Section R404—Foundation and retaining walls.
51-51-0408 Section R408—Under-floor space.
51-51-0501 Section R501—General.
51-51-0502 Section R502—Reserved.
51-51-0507 Section R507—Decks.
51-51-0602 Section R602—Wood wall framing.
51-51-0612 Section R612—Exterior windows and doors.
51-51-0702 Section R702—Interior covering.
51-51-0703 Section R703—Exterior covering.
51-51-0806 Section R806—Reserved.
51-51-0903 Section R903—Weather protection.
51-51-1001 Section R1001—Masonry fireplaces.
51-51-1002 Section R1002—Masonry heaters.
51-51-1004 Section R1004—Factory-built fireplaces.
51-51-1006 Section R1006—Exterior air supply.
51-51-1201 Section M1201—General.
51-51-1301 Section M1301—General.
51-51-1302 Section M1302—Reserved.
51-51-1415 Section M1415—Reserved.
51-51-1501 Reserved.
51-51-1507 Section M1507—Mechanical ventilation.
51-51-1508 Section M1508—Reserved.
51-51-1600 Chapter 16—Duct systems.
51-51-1700 Chapter 17—Combustion air.
51-51-2000 Chapter 20—Boilers and water heaters.
51-51-2439 Reserved.
51-51-4400 Chapter 44—Referenced standards.
51-51-60101 Appendix F radon control methods.
51-51-60103 Section AF103—Requirements.
51-51-60105 Appendix R—Dwelling unit fire sprinkler systems.
51-51-60107 Appendix S—Fire sprinklers.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

51-51-0101 Section R101—Title, scope and purpose. [Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-0101, filed 12/17/03, effective 7/1/04.] Repealed by WSR 07-01-090, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.074, 19.27.-020, and chapters 19.27 and 34.05 RCW.

51-51-0324 Section R324—Adult family homes. [Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-0324, filed 12/17/03, effective 7/1/04.] Repealed by WSR 07-01-090, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW.

51-51-0613 Section R613—Exterior windows and glass doors. [Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0613, filed 12/19/06, effective 7/1/07.] Decodified and amended by WSR 10-03-098, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.031 and 19.27.074. Recodified as § 51-51-0612.

51-51-2401 Section G2401 (101)—General. [Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-2401, filed 12/17/03, effective 7/1/04.] Repealed by WSR 07-01-090, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW.

51-51-2415 Section G2415 (404)—Piping system installation. [Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-2415, filed 12/17/03, effective 7/1/04.] Repealed by WSR 07-01-090, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW.

51-51-4300 Chapter 43—Referenced standards. [Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-4300, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-4300, filed 12/17/03, effective 7/1/04.] Decodified and amended by WSR 10-03-098, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.031 and 19.27.074. Recodified as § 51-51-4400.

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

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-001, filed 12/17/03, effective 7/1/04.]

WAC 51-51-002 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 and 19.27.074. WSR 04-01-109, § 51-51-002, filed 12/17/03, effective 7/1/04.]

WAC 51-51-003 International Residential Code. The 2012 edition of the *International Residential Code* as published by the International Code Council is hereby adopted by reference with the following additions, deletions, and exceptions: Provided that chapters 11 and 25 through 43 of this code are not adopted. Energy Code is regulated by chapter 51-11R WAC; Plumbing Code is regulated by chapter 51-56 WAC; Electrical Code is regulated by chapter 296-46B WAC or Electrical Code as adopted by the local jurisdiction. Appendix F, Radon Control Methods, Appendix G, Swimming Pools, Spas and Hot Tubs, and Appendix R, Dwelling

Unit Fire Sprinkler Systems, are included in adoption of the International Residential Code.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-003, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-003, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.-020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-003, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-003, filed 12/17/03, effective 7/1/04.]

WAC 51-51-007 Exceptions. The exceptions and amendments to the International Residential 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.

The provisions of this code do not apply to the construction, alteration, or repair of temporary worker housing except as provided by rule adopted under chapter 70.114A RCW or chapter 37, Laws of 1998 (SB 6168). "Temporary worker housing" means a place, area, or piece of land where sleeping places or housing sites are provided by an employer for his or her employees or by another person, including a temporary worker housing operator, who is providing such accommodations for employees, for temporary, seasonal occupancy, and includes "labor camps" under RCW 70.54.110.

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.

The standards for liquefied petroleum gas installations shall be NFPA 58 (Liquefied Petroleum Gas Code) and NFPA 54 (National Fuel Gas Code). All other fuel gas installations shall be regulated by the International Mechanical Code and International Fuel Gas Code.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-007, filed 12/17/03, effective 7/1/04.]

WAC 51-51-008 Implementation. The International Residential Code adopted by chapter 51-51 WAC shall become effective in all counties and cities of this state on July 1, 2013.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-008, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-008, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.-020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-008, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-008, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0102 Section R102—Applicability.

R102.5 Appendices. Provisions in the appendices shall not apply unless specifically referenced in the adopting ordinance. Except for Appendix S, Fire Sprinklers, an appendix adopted by a local jurisdiction shall not be effective unless approved by the state building code council pursuant to RCW 19.27.060 (1)(a). The state building code council has determined that a local ordinance requiring fire sprinklers in accordance with Appendix S of this chapter may be adopted by any local government upon notification of the council.

Appendix F, Radon Control Methods, Appendix G, Swimming Pools, Spas and Hot Tubs, and Appendix R, Dwelling Unit Fire Sprinkler Systems, are included in adoption of the International Residential Code.

R102.7.1 Additions, alterations or repairs. Additions, alterations or repairs to any structure shall conform to the requirements for a new structure without requiring the existing structure to comply with all of the requirements of this code, unless otherwise stated. Additions, alterations or repairs shall not cause an existing structure to become unsafe or adversely affect the performance of the building.

EXCEPTIONS:

1. Additions with less than 500 square feet of conditioned floor area are exempt from the requirements for Whole House Ventilation Systems, Section M1508.
2. Additions or alterations to existing buildings which do not require the construction of foundations, crawlspaces, slabs or basements shall not be required to meet the requirements for radon protection in Section R327.1 and Appendix F.

R102.7.2 Moved buildings. Buildings or structures moved into or within a jurisdiction shall comply with the provisions of this code, the International Building Code (chapter 51-50 WAC), the International Mechanical Code (chapter 51-52 WAC), the International Fire Code (chapter 51-54 WAC), the Uniform Plumbing Code and Standards (chapter 51-56 WAC), and the Washington State Energy Code (chapter 51-11R WAC) for new buildings or structures.

EXCEPTION: Group R-3 buildings or structures are not required to comply if:

1. The original occupancy classification is not changed; and
2. The original building is not substantially remodeled or rehabilitated. For the purposes of this section a building shall be considered to be substantially remodeled when the costs of remodeling exceed 60 percent of the value of the building exclusive of the costs relating to preparation, construction, demolition or renovation of foundations.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0102, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0102, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.-020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0102, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-0102, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0202 Section R202—Definitions.

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

AIR-IMPERMEABLE INSULATION. An insulation having an air permeance equal to or less than 0.02 L/s-m^2 at 75 Pa pressure differential tested in accordance with ASTM E2178 or ASTM E283.

ATTIC, HABITABLE. A conditioned area complying with all of the following requirements:

1. The occupiable floor area is at least 70 square feet (6.5 m^2), in accordance with Section R304.

2. The occupiable floor area has a ceiling height in accordance with Section R305.

3. The occupiable space is entirely enclosed by the roof assembly above, knee walls (if applicable) on the sides, and the floor-ceiling assembly below.

A habitable attic is not considered a story.

CHILD DAY CARE, shall, for the purposes of these regulations, mean the care of children during any period of a 24 hour day.

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

DWELLING UNIT. A single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. Dwelling units may also include the following uses:

1. Adult family homes, foster family care homes and family day care homes licensed by the Washington state department of social and health services.

2. Offices, mercantile, food preparation for off-site consumption, personal care salons or similar uses which are conducted primarily by the occupants of the dwelling unit and are secondary to the use of the unit for dwelling purposes, and which do not exceed 500 square feet (46.4 m^2).

3. One accessory dwelling unit, which need not be considered a separated dwelling unit, provided:

a. The accessory dwelling unit is constructed within an existing dwelling unit.

b. Either the accessory dwelling unit or primary dwelling unit is owner-occupied.

c. All required smoke alarms in the accessory dwelling unit and the primary dwelling unit are interconnected in such a manner that the actuation of one alarm will activate all alarms in both the primary dwelling unit and the accessory dwelling unit.

FIRE SEPARATION DISTANCE. The distance measured from the foundation wall or face of the wall framing, whichever is closer, to one of the following:

1. To the closest interior lot line; or

2. To the centerline of a street, an alley or public way; or

3. To an imaginary line between two buildings on the lot.

The distance shall be measured at a right angle from the wall.

MEZZANINE, LOFT. An intermediate level or levels between the floor and ceiling of any story.

SMALL BUSINESS. Any business entity (including a sole proprietorship, corporation, partnership or other legal entity) which is owned and operated independently from all other businesses, which has the purpose of making a profit, and which has fifty or fewer employees.

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

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0202, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0202, 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 09-04-023, § 51-51-0202, filed 1/27/09, effective 7/1/09; WSR 08-01-102, § 51-51-0202, filed 12/18/07, effective 4/1/08. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0202, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.-074. WSR 04-01-109, § 51-51-0202, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0301 Design criteria.

R301.2.2.3.1 Height limitations. Wood-framed buildings shall be limited to three stories above *grade plane* or the limits given in Table R602.10.3(3). Cold-formed, steel-framed buildings shall be limited to less than or equal to three stories above *grade plane* in accordance with AISI S230. *Mezzanines* that comply with Section R328 shall not be considered as stories. Structural insulated panel buildings shall be limited to two stories above *grade plane*.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0301, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0301, 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 08-01-102, § 51-51-0301, filed 12/18/07, effective 4/1/08.]

WAC 51-51-0302 Section R302—Fire-resistant construction.

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or *dwellings* equipped throughout with an *automatic sprinkler system* installed in accordance with Section P2904 shall comply with Table R302.1(2).

EXCEPTIONS:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.

2. Walls of dwellings and accessory structures located on the same lot.

3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.

4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).

5. Foundation vents installed in compliance with this code are permitted.

TABLE R302.1(1)
EXTERIOR WALLS

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	Fire-resistance rated	1-hour tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Fire-resistance rated	1 hour on the underside[a, b]	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area per story	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 5 feet
		None required	5 feet

For IS: 1 foot = 304.8 mm. N/A = Not Applicable

[a] Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fire blocking is provided from the wall top plate to the underside of the roof sheathing.

[b] Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided no gable vent openings are installed.

Table R302.1(2)
Exterior Walls—Dwellings with Fire Sprinklers

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	Fire-resistance rated	1-hour tested in accordance with ASTM E 119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet[a]
Projections	Fire-resistance rated	1 hour on the underside[b, c]	2 feet[a]
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet[a]
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet[a]

For IS: 1 foot = 304.8 mm. N/A = Not Applicable

[a] For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler system installed in accordance with P2904, the fire separation distance for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

[b] Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fire blocking is provided from the wall top plate to the underside of the roof sheathing.

[c] Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided no gable vent openings are installed.

R302.2.1 Continuity. The fire-resistance-rated wall or assembly separating townhouses shall be continuous from the foundation to the underside of the roof sheathing, deck or slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed accessory structures.

Where a story extends beyond the exterior wall of a story below:

1. The fire-resistance-rated wall or assembly shall extend to the outside edge of the upper story; or

2. The underside of the exposed floor-ceiling assembly shall be protected as required for projections in Section R302.

R302.2.4 Structural independence. Each individual townhouse shall be structurally independent.

EXCEPTIONS:
1. Foundation supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may be fastened to the common wall framing.
3. Nonstructural wall and roof coverings.

4. Flashing at termination of roof covering over common wall.

5. Townhouses separated by a common 1-hour fire-resistance-rated wall as provided in Section R302.2.

6. Floor sheathing may fasten to the floor framing of both units.

R302.3.1 Supporting construction. When floor assemblies are required to be fire-resistance rated by Section R302.3, the supporting construction of such assemblies shall have an equal or greater fire-resistance rating.

EXCEPTION: The supporting construction is not required to be fire-resistance rated where:

1. Automatic fire sprinklers are installed in accordance with appendix R in both dwelling units;

or

2. All required smoke alarms in both dwelling units are interconnected in such a manner that the actuation of one alarm will activate all alarms in both dwelling units.

[Statutory Authority: Chapters 19.27A and 34.05 RCW. WSR 13-23-084, § 51-51-0302, filed 11/19/13, effective 4/1/14. Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0302, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0302, 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 09-04-023, § 51-51-0302, filed 1/27/09, effective 7/1/09; WSR 08-01-102, § 51-51-0302, filed 12/18/07, effective 4/1/08.]

WAC 51-51-0303 Section R303—Light, ventilation and heating.

R303.1 Natural light. All habitable rooms shall have an aggregate glazing area of not less than 8 percent of the floor area of such rooms.

EXCEPTION: The glazed areas need not be installed in rooms where artificial light is provided capable of producing an average illumination of 6 footcandles (65 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.

R303.2 Adjoining rooms. For the purpose of determining light requirements, any room shall be considered as a portion of an adjoining room when at least one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room but not less than 25 square feet (2.3 m^2).

EXCEPTION: Openings required for light shall be permitted to open into a sunroom with thermal isolation or a patio cover, provided there is an openable area between the adjoining room and the sunroom or a patio cover of not less than one-tenth of the floor area of the interior room but not less than 20 square feet (2 m^2).

R303.3 Bathrooms. This section is not adopted.

R303.4 Minimum ventilation performance. Dwelling units shall be equipped with local exhaust and whole house ventilation systems designed and installed as specified in Section M1507.

EXCEPTION: Additions with less than 500 square feet of conditioned floor area are exempt from the requirements in this Code for Whole House Ventilation Systems.

R303.5 Opening location. Outdoor intake and exhaust openings shall be located in accordance with Sections R303.5.1 and R303.5.2.

R303.5.1 Intake openings. Mechanical and gravity outdoor air intake openings shall be located a minimum of 10 feet (3048 mm) from any hazardous or noxious contaminant, such as vents, chimneys, plumbing vents, streets, alleys, parking lots and loading docks, except as otherwise specified in this code. Where a source of contaminant is located within 10 feet (3048 mm) of an intake opening, such opening shall be located a minimum of 3 feet (914 mm) below the contaminant source.

For the purpose of this section, the exhaust from *dwelling unit* toilet rooms, bathrooms and kitchens shall not be considered as hazardous or noxious.

R303.5.2 Exhaust openings. Exhaust air shall not be directed onto walkways. All exhaust ducts shall terminate outside the building. Terminal elements shall have at least the equivalent net free area of the duct work.

R303.5.2.1 Exhaust ducts. Exhaust ducts shall be equipped with back-draft dampers. All exhaust ducts in unconditioned spaces shall be insulated to a minimum of R-4.

R303.7 Stairway illumination. All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Stairway illumination shall receive primary power from the building wiring. Interior stairways shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not less than 1 foot-candle (11 lux) measured at the center of treads and landings. Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway.

EXCEPTION: An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stairway section.

R303.9 Required heating. When the winter design temperature in Table R301.2(1) is below 60°F (16°C), every *dwelling unit* shall be provided with heating facilities capable of maintaining a minimum room temperature of 68°F (20°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in all habitable rooms at design temperature. The installation of one or more portable heaters shall not be used to achieve compliance with this section.

EXCEPTION: Unheated recreational tents or yurts not exceeding 500 square feet provided it is not occupied as a permanent dwelling.

R303.9.1 Definitions. For the purposes of this section only, the following definitions apply.

DESIGNATED AREAS are those areas designated by a county to be an urban growth area in chapter 36.70A RCW and those areas designated by the U.S. Environmental Protection Agency as being in nonattainment for particulate matter.

SUBSTANTIALLY REMODELED means any alteration or restoration of a building exceeding 60 percent of the appraised

value of such building within a 12 month period. For the purpose of this section, the appraised value is the estimated cost to replace the building and structure in kind, based on current replacement costs.

R303.9.2 Primary heating source. Primary heating sources in all new and substantially remodeled buildings in designated areas shall not be dependent upon wood stoves.

R303.9.3 Solid fuel burning devices. No new or used solid fuel burning device shall be installed in new or existing buildings unless such device is U.S. Environmental Protection Agency certified or exempt from certification by the United States Environmental Protection Agency and conforms with RCW 70.94.011, 70.94.450, 70.94.453, and 70.94.457.

EXCEPTIONS: 1. Wood cook stoves.
2. Antique wood heaters manufactured prior to 1940.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0303, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0303, filed 1/20/10, effective 7/1/10; WSR 04-01-109, § 51-51-0303, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0311 Section R311—Means of egress.

R311.4 Vertical egress. Egress from habitable levels including habitable attics and basements not provided with an egress door in accordance with Section R311.2 shall be by ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

EXCEPTION: Stairs or ladders within an individual dwelling unit used for access to areas of 200 square feet (18.6 m^2) or less, and not containing the primary bathroom or kitchen.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0311, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0311, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-0311, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0313 Section R313—Automatic fire sprinkler systems.

This section not adopted.

[Statutory Authority: Chapter 19.27 RCW. WSR 10-18-036, § 51-51-0313, filed 8/25/10, effective 9/25/10. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0313, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0313, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-0313, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0314 Section R314—Smoke alarms.

R314.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.

2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.

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

4. In napping areas in a family home child care.

R314.3.1 Alterations, Repairs and Additions. When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms as required for new dwellings.

EXCEPTIONS: 1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing, electrical or mechanical systems are exempt from the requirements of this section.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0314, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0314, filed 1/20/10, effective 7/1/10.]

WAC 51-51-0315 Section R315—Carbon monoxide alarms.

R315.1 Carbon Monoxide Alarms. For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units and on each level of the dwelling and in accordance with the manufacturer's recommendations.

R315.2 Carbon monoxide detection systems. Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720-2012, shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy.

EXCEPTION: Where carbon monoxide alarms are installed meeting the requirements of Section R315.1, compliance with Section R315.2 is not required.

R315.3 Where required in existing dwellings. Existing dwellings shall be equipped with carbon monoxide alarms in accordance with Section R315.1. An inspection will occur when alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created.

EXCEPTIONS: 1. Work involving only the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, or electrical permits, are exempt from the inspection requirements of this section.
2. Installation, alteration or repairs of nonfuel burning plumbing or mechanical systems are exempt from the inspection requirements of this section.
3. Owner-occupied single-family residences legally occupied before July 26, 2009. RCW 19.27.530 (2)(b).

R315.4 Alarm requirements. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and

shall be installed in accordance with this code, NFPA 720-2012 and the manufacturer's installation instructions.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0315, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.074 and 19.27.530. WSR 12-01-099, § 51-51-0315, filed 12/20/11, effective 4/1/12. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0315, filed 1/20/10, effective 7/1/10.]

WAC 51-51-0317 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0317, 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 08-01-102, § 51-51-0317, filed 12/18/07, effective 4/1/08. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0317, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0322 Section R322—Flood resistant construction.

R322.2.1 Elevation Requirements.

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones, shall have the lowest floor elevated to or above the design flood elevation, or a greater elevation as designated by local ordinance.

2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or to the design flood elevation, whichever is higher.

3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet on the FIRM, or at least 2 feet (610 mm)if a depth number is not specified.

4. Basement floors that are below grade on all sides shall be elevated to or above the design flood elevation.

EXCEPTION: Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R322.2.2.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0322, filed 1/20/10, effective 7/1/10.]

WAC 51-51-0325 Section R325—Adult family homes.

SECTION R325
ADULT FAMILY HOMES

R325.1 General. This section shall apply to all newly constructed adult family homes and all existing single family homes being converted to adult family homes. This section shall not apply to those adult family homes licensed by the state of Washington department of social and health services prior to July 1, 2001.

R325.2 Submittal standards. In addition to those requirements in Section 106.1, the submittal shall identify the project as a Group R-3 Adult Family Home Occupancy. A floor plan shall be submitted identifying the means of egress and the components in the means of egress such as stairs, ramps, platform lifts and elevators. The plans shall indicate the rooms used for clients and the sleeping room classification of each room.

R325.3 Sleeping room classification. Each sleeping room in an adult family home shall be classified as:

1. Type S - Where the means of egress contains stairs, elevators or platform lifts.

2. Type NS1 - Where one means of egress is at grade level or a ramp constructed in accordance with R325.9 is provided.

3. Type NS2 - Where two means of egress are at grade level or ramps constructed in accordance with R325.9 are provided.

R325.4 Types of locking devices and door activation. All bedroom and bathroom doors shall be openable from the outside when locked.

Every closet shall be readily openable from the inside.

Operable parts of door handles, pulls, latches, locks and other devices installed in adult family homes shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. Pocket doors shall have graspable hardware available when in the closed or open position.

The force required to activate operable parts shall be 5.0 pounds (22.2 N) maximum. Required exit doors shall have no additional locking devices.

Required exit door hardware shall unlock inside and outside mechanisms when exiting the building allowing reentry into the adult family home without the use of a key, tool or special knowledge.

R325.5 Smoke and carbon monoxide alarm requirements. All adult family homes shall be equipped with smoke and carbon monoxide alarms installed as required in Sections R314 and R315.1. Alarms shall be installed in such a manner so that the detection device warning is audible from all areas of the dwelling upon activation of a single alarm.

R325.6 Escape windows and doors. Every sleeping room shall be provided with emergency escape and rescue windows as required by Section R310. No alternatives to the sill height such as steps, raised platforms or other devices placed by the openings will be approved as meeting this requirement.

R325.7 Fire apparatus access roads and water supply for fire protection. Adult family homes shall be served by fire apparatus access roads and water supplies meeting the requirements of the local jurisdiction.

R325.8 Grab bar general requirements. Where facilities are designated for use by adult family home clients, grab bars for water closets, bathtubs and shower stalls shall be installed according to this section.

R325.8.1 Grab bar cross section. Grab bars with a circular cross section shall have an outside diameter of 1 1/4 inches minimum and 2 inches maximum. Grab bars with noncircular cross section shall have a cross section dimension of 2 inches maximum and a perimeter dimension of 4 inches minimum and 4 5/8 inches maximum.

R325.8.2 Grab bar installation. Grab bars shall have a spacing of 1 1/2 inches between the wall and the bar. Projecting objects, control valves and bathtub or shower stall enclosure

features above, below and at the ends of the grab bar shall have a clear space of 1 1/2 inches to the grab bar.

EXCEPTION: Swing-up grab bars shall not be required to meet the 1 1/2 inch spacing requirement.

Grabs bars shall have a structural strength of 250 pounds applied at any point on the grab bar, fastener, mounting device or supporting structural member. Grab bars shall not be supported directly by any residential grade fiberglass bathing or showering unit. Acrylic bars found in bathing units shall be removed.

Fixed position grab bars, when mounted, shall not rotate, spin or move and have a graspable surface finish.

R325.8.3 Grab bars at water closets. Water closets shall have grab bars mounted on both sides. Grab bars can be a combination of fixed position and swing-up bars. Grab bars shall meet the requirements of R325.8. Grab bars shall mount between 33 inches and 36 inches above floor grade. Centerline distance between grab bars, regardless of type used, shall be between 25 inches minimum and 30 inches maximum.

R325.8.3.1 Fixed position grab bars. Fixed position grab bars shall be a minimum of 36 inches in length and start 12 inches from the rear wall.

R325.8.3.2 Swing-up grab bars. Swing-up grab bars shall be a minimum of 28 inches in length from the rear wall.

R325.8.4 Grab bars at bathtubs. Horizontal and vertical grab bars shall meet the requirements of R325.8.

R325.8.4.1 Vertical grab bars. Vertical grab bars shall be a minimum of 18 inches long and installed at the control end wall and head end wall. Grab bars shall mount within 4 inches of the exterior of the bath tub edge or within 4 inches within the bath tub. The bottom end of the bar shall start between 36 inches and 42 inches above floor grade.

EXCEPTION: The required vertical grab bar can be substituted with a floor to ceiling grab bar meeting the requirements of R325.8 at the control end and head end entry points.

R325.8.4.2 Horizontal grab bars. Horizontal grab bars shall be provided at the control end, head end, and the back wall within the bathtub area. Grab bars shall be mounted between 33 inches and 36 inches above floor grade. Control end and head end grab bars shall be 24 inches minimum in length. Back wall grab bar shall be 36 inches minimum in length.

R325.8.5 Grab bars at shower stalls. Where shower stalls are provided to meet the requirements for bathing facilities, grab bars shall meet the requirements of R325.8.

EXCEPTION: Shower stalls with permanent built-in seats are not required to have vertical or horizontal grab bars at the seat end wall. A vertical floor to ceiling grab bar shall be installed within 4 inches of the exterior of the shower aligned with the nose of the built-in seat.

R325.8.5.1 Vertical grab bars. Vertical grab bars shall be 18 inches minimum in length and installed at the control end wall and head end wall. Vertical bars shall be mounted within 4 inches of the exterior of the shower stall or within 4 inches inside the shower stall. The bottom end of vertical bars mount between 36 inches and 42 inches above floor grade.

R325.8.5.2 Horizontal grab bars. Horizontal grab bars shall be installed on all sides of the shower stall mounted between 33 inches and 36 inches above the floor grade. Horizontal grab bars shall be a maximum of 6 inches from adjacent walls. Horizontal grab bars shall not interfere with shower control valves.

R325.9 Ramps. All interior and exterior ramps, when provided, shall be constructed in accordance with Section R311.8 with a maximum slope of 1 vertical to 12 horizontal. The exception to R311.8.1 is not allowed for adult family homes. Handrails shall be installed in accordance with R325.9.1.

R325.9.1 Handrails for ramps. Handrails shall be installed on both sides of ramps between the slope of 1 vertical to 12 horizontal and 1 vertical and 20 horizontal in accordance with R311.6.3.1 through R311.6.3.3.

R325.10 Stair treads and risers. Stair treads and risers shall be constructed in accordance with R311.7.4. Handrails shall be installed in accordance with R325.10.1.

R325.10.1 Handrails for treads and risers. Handrails shall be installed on both sides of treads and risers numbering from one riser to multiple risers. Handrails shall be installed in accordance with R311.7.7 through R311.7.7.4.

R325.11 Shower stalls. Where provided to meet the requirements for bathing facilities, the minimum size of shower stalls for an adult family home shall be 30 inches deep by 48 inches long.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0325, filed 2/1/13, effective 7/1/13. Statutory Authority: Chapter 19.27 RCW. WSR 10-18-036, § 51-51-0325, filed 8/25/10, effective 9/25/10. Statutory Authority: RCW 19.27.190, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 09-04-023, § 51-51-0325, filed 1/27/09, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0325, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-0325, filed 12/17/03, effective 7/1/04.]

WAC 51-51-0326 Section R326—Family home child care.

R326 Family home child care. For family home child care with more than six children, each floor level used for family child care purposes shall be served by two remote means of egress. Exterior exit doors shall be operable from the inside without the use of keys or any special knowledge or effort.

Basements located more than 4 feet below grade level shall not be used for family home child care unless one of following conditions exist:

1. Stairways from the basement open directly to the exterior of the building without entering the first floor; or

2. One of the two required means of egress discharges directly to the exterior from the basement level, and a self-closing door is installed at the top or bottom of the interior stair leading to the floor above; or

3. One of the two required means of egress is an operable window or door, approved for emergency escape or rescue, that opens directly to a public street, public alley, yard or exit court; or

4. A residential sprinkler system is provided throughout the entire building in accordance with NFPA 13d.

Floors located more than 4 feet above grade level shall not be occupied by children in family home child care.

EXCEPTIONS: 1. Use of toilet facilities while under supervision of an adult staff person.

2. Family home child care may be allowed on the second story if one of the following conditions exists:

2.1 Stairways from the second story open directly to the exterior of the building without entering the first floor; or

2.2 One of the two required means of egress discharges directly to the exterior from the second story level, and a self-closing door is installed at the top or bottom of the interior stair leading to the floor below; or

2.3 A residential sprinkler system is provided throughout the entire building in accordance with NFPA 13d.

Every sleeping or napping room in a family home child care shall have at least one operable window for emergency rescue.

EXCEPTION: Sleeping or napping rooms having doors leading to two separate means of egress, or a door leading directly to the exterior of the building.

Rooms or spaces containing a commercial-type cooking kitchen, boiler, maintenance shop, janitor closet, laundry, woodworking shop, flammable or combustible storage, or painting operation shall be separated from the family home child care area by at least one-hour fire-resistive construction.

EXCEPTION: A fire-resistive separation shall not be required where the food preparation kitchen contains only a domestic cooking range, and the preparation of food does not result in the production of smoke or grease laden vapors.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0326, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0326, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0327 Section R327—Protection against radon.

R327.1 Protection Against Radon. The radon control provisions of Appendix F of this code shall apply to buildings constructed in High Radon Potential Counties (zone 1) designated in Table AF101 (1). The radon control provisions of Appendix F of this code shall also apply to all buildings constructed using the provisions of Section R408.3 Unvented crawl space compliance method.

[Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0327, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0328 Section R328—Mezzanines.

R328.1 General. Mezzanines shall comply with Section R328.

R328.2 Mezzanines. The clear height above and below *mezzanine* floor construction shall meet the requirements of R305.1.

R328.3 Area limitation. The aggregate area of a *mezzanine* shall be not greater than one-third of the floor area of the room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located.

R328.4 Means of egress. The *means of egress* for *mezzanines* shall comply with the applicable provisions of Section R311.

R328.5 Openness. A *mezzanine* shall be open and unobstructed to the room in which the *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

EXCEPTIONS: 1. *Mezzanines* or portions thereof are not required to be open to the room in which they are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.

2. *Mezzanines* that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with NFPA 13R, NFPA 13D or Appendix S, and having two or more *means of egress*, shall not be required to be open to the room in which the *mezzanine* is located.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0328, filed 2/1/13, effective 7/1/13.]

WAC 51-51-0403 Section R403—Footings.

TABLE R403.1
MINIMUM WIDTH OF CONCRETE, PRECAST OR MASONRY FOOTINGS
(inches)

	LOAD-BEARING VALUE OF SOIL (psf)			
	1,500	2,000	3,000	≥4,000
Conventional light-frame construction				
1 floor[b, c]	12	12	12	12
2 floors[b, c]	15	12	12	12
3 floors[b, c]	23	17	12	12
4-inch brick veneer over light frame or 8-inch hollow concrete masonry				
1-story	12	12	12	12
2-story	21	16	12	12
3-story	32	24	16	12
8-inch solid or fully grouted masonry				
1-story	16	12	12	12
2-story	29	21	14	12
3-story	42	32	21	16

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479kPa.

a. Where minimum footing width is 12 inches, use of a single wythe of solid or fully grouted 12-inch nominal concrete masonry units is permitted.

b. Represents the number of floors supported.

c. Footings shall be permitted to support a roof in addition to the stipulated number of floors. Footings supporting a roof only shall be as required for supporting one floor.

R403.1.2 Continuous Footing in Seismic Design Categories D_0, D_1 and D_2. The braced wall panels at exterior walls of buildings located in Seismic Design Categories D_0, D_1 and D_2 shall be supported by continuous footings. All required interior braced wall panels shall be supported on footings at intervals not exceeding 50 feet (15,240 mm).

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0403, filed 2/1/13, effective 7/1/13. Statutory Authority: Chapter 19.27 RCW. WSR 10-24-061, § 51-51-0403, filed 11/29/10, effective 7/1/11. Statutory Authority: RCW 19.27.031 and

19.27.074. WSR 10-03-098, § 51-51-0403, 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 08-01-103, § 51-51-0403, filed 12/18/07, effective 4/1/08. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0403, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0404 Section R404—Foundation and retaining walls.

R404.1.2.2 Reinforcement for foundation walls. Concrete foundation walls shall be laterally supported at the top except where permitted in R404.1.2.2.1 and R404.1.2.2.2, and at the bottom where required elsewhere in this code. Horizontal reinforcement shall be provided in accordance with Table R404.1.2(1). Vertical reinforcement shall be provided in accordance with Table R404.1.2(2), R404.1.2(3), R404.1.2(4), R404.1.2(5), R404.1.2(6), R404.1.2(7) or R404.1.2(8). Vertical reinforcement for flat basement walls retaining 4 feet (1,219 mm) or more of unbalanced backfill is permitted to be determined in accordance with Table R404.1.2(9).

For basement walls supporting above-grade concrete walls, vertical reinforcement shall be the greater of that required by Tables R404.1.2(2) through R404.1.2(8) or by Section 611.6 for the above-grade wall. In buildings assigned to Seismic Design Category D_0, D_1 or D_2, concrete foundation walls shall also comply with Section R404.1.4.2.

R404.4 Retaining walls. Retaining walls not supporting a structure that are not laterally supported at the top and that retain in excess of 24 inches (610 mm) of unbalanced fill shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0404, filed 2/1/13, effective 7/1/13. Statutory Authority: Chapter 19.27 RCW. WSR 10-24-061, § 51-51-0404, filed 11/29/10, effective 7/1/11. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0404, 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 08-01-102, § 51-51-0404, filed 12/18/07, effective 4/1/08. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0404, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0408 Section R408—Under-floor space.

R408.1 Ventilation. The under-floor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement) shall have ventilation openings through foundation walls or exterior walls.

R408.2 Openings for under-floor ventilation. The minimum net area of ventilation openings shall not be less than 1 square foot (0.0929 m^2) for each 300 square feet (28 m^2) of under-floor area. Required openings shall be evenly placed to provide cross ventilation of the space except one side of the building shall be permitted to have no ventilation openings. Ventilation openings shall be covered for their height and width with any of the following materials provided that the least dimension of the covering shall not exceed 1/4 inch (6.4 mm):

1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
3. Cast-iron grill or grating.
4. Extruded load-bearing brick vents.
5. Hardware cloth of 0.035 inch (0.89 mm) wire or heavier.
6. Corrosion-resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm).

EXCEPTION: The total area of ventilation openings shall be permitted to be reduced to 1/1,500 of the under-floor area where the ground surface is covered with an approved Class I vapor retarder material and the required openings are placed to provide cross ventilation of the space. The installation of operable louvers shall not be prohibited. If the installed ventilation is less than 1/300, or if operable louvers are installed, a radon vent shall be installed to originate from a point between the ground cover and soil. The radon vent shall be installed in accordance with the requirements of Appendix F (Radon) of this code.

R408.3 Unvented crawl space. Ventilation openings in under-floor spaces specified in Sections R408.1 and R408.2 shall not be required where:

1. Exposed earth is covered with a continuous Class I vapor retarder. Joints of the vapor retarder shall overlap by 6 inches (152 mm) and shall be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (152 mm) up the stem wall and shall be attached and sealed to the stem wall; and a radon system shall be installed that meets the requirements of Appendix F (Radon) of this code.

2. Continuously operated mechanical exhaust ventilation is provided at a rate equal to 1 cubic foot per minute (0.47 L/s) for each 50 square feet (4.7 m^2) of crawlspace floor area. Exhaust ventilation shall terminate to the exterior.

EXCEPTION: Plenum in existing structures complying with Section M1601.5, if under-floor space is used as a plenum.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0408, filed 2/1/13, effective 7/1/13. Statutory Authority: Chapter 19.27 RCW. WSR 10-18-036, § 51-51-0408, filed 8/25/10, effective 9/25/10. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0408, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0408, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0501 Section R501—General.

R501.3 Fire protection of floors. Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard membrane, 5/8-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member.

EXCEPTIONS:
1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA 13D, or other approved equivalent sprinkler system.
2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.
3. Portions of floor assemblies can be unprotected when complying with the following:

3.1. The aggregate area of the unprotected portions shall not exceed 80 square feet per story.

3.2. Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.

4. Wood floor assemblies using dimensional lumber or *structural composite lumber* with a cross sectional area equal to or greater than 2-inch by 10-inch nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0501, filed 2/1/13, effective 7/1/13.]

WAC 51-51-0502 Section R502—Reserved.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0502, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0502, filed 1/20/10, effective 7/1/10.]

WAC 51-51-0507 Section R507—Decks.

R507.2.2 Alternate deck ledger connections. Deck ledger connections not conforming to Table R507.2 shall be attached with approved fasteners having equivalent withdrawal capacity or be designed in accordance with accepted engineering practice. Girders supporting deck joists shall not be supported on deck ledgers or band joists. Deck ledgers shall not be supported on stone or masonry veneer.

R507.2.3 Deck lateral load connections. The lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.3. Where the lateral load connection is provided in accordance with Figure R507.2.3, hold-down tension devices shall be installed in not less than two locations per deck, and each device shall have an allowable stress design capacity of not less than 1500 pounds (6672 N).

EXCEPTIONS:

1. Decks not more than 30 inches above grade at any point may be unattached.

2. Where a new deck is being added to an existing structure, the lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.4.

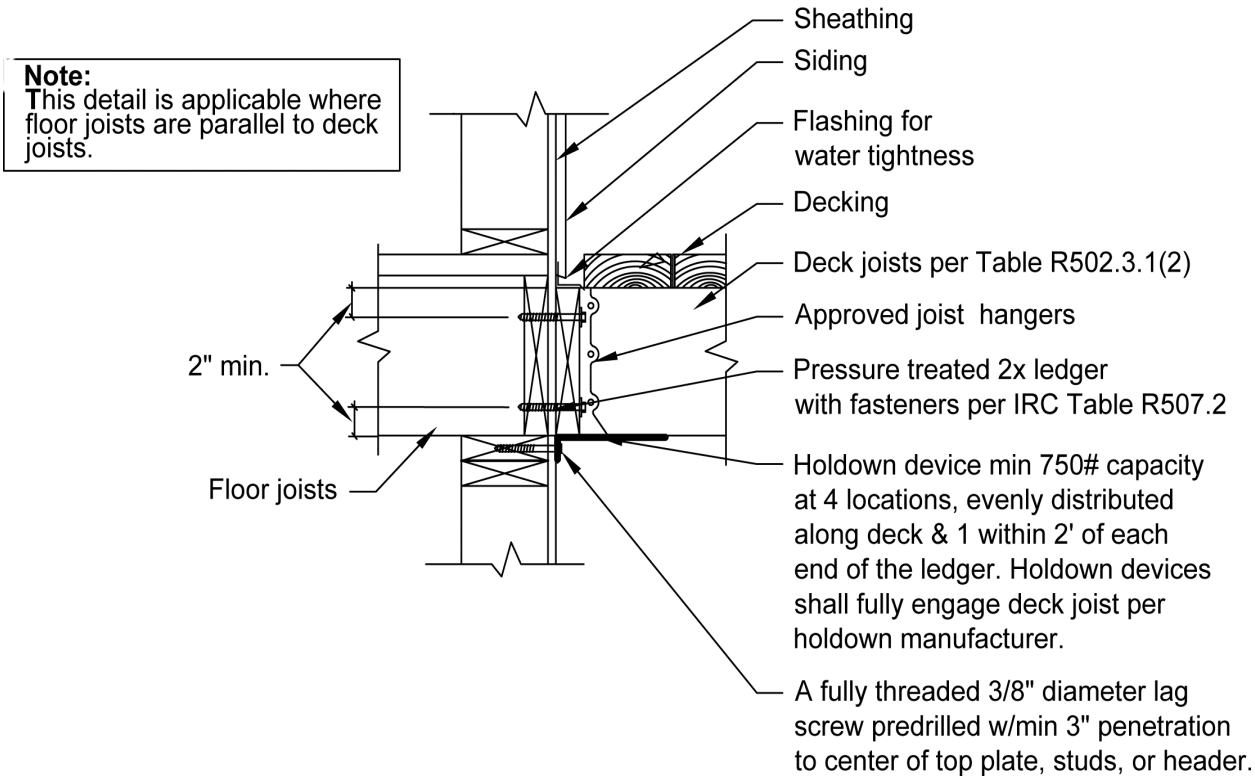


Figure R507.2.4

Table 507.2.1
Placement of Lag Screws and Bolts in Deck Ledgers and Band Joists

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger[a]	2 inches[d]	3/4 inch	2 inches[b]	1 5/8 inches[b]
Band joist[c]	3/4 inch	2 inches[e]	2 inches[b]	1 5/8 inches[b]

For SI: 1 inch = 25.4 mm.

a Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).

b Maximum 5 inches.

c For engineered rim joists, the manufacturer's recommendations shall govern.

d The minimum distance from bottom row of lag screws to the top edge of the ledger shall be in accordance with Figure R507.2.1(1).

e The 2 inches may be reduced to 3/4 inch when the band joist is directly supported by a mudsill, a header or by double top wall plates

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0507, filed 2/1/13, effective 7/1/13.]

WAC 51-51-0602 Section R602—Wood wall framing.

R602.9 Foundation cripple walls. Foundation cripple walls shall be framed of studs not smaller than the studding above. When exceeding 4 feet (1219 mm) in height, such walls shall be framed of studs having the size required for an additional story.

Cripple walls supporting bearing walls or exterior walls or interior braced wall panels as required in Sections R403.1.2 and R602.10.9.1 with a stud height less than 14 inches (356 mm) shall be continuously sheathed on one side with wood structural panels fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. All cripple walls shall be supported on continuous footings or foundations.

EXCEPTION: Footings supporting cripple walls used to support interior braced wall panels as required in Sections R403.1.2 and R602.10.9.1 shall be continuous for the required length of the cripple wall and constructed beyond the cripple wall for a minimum distance of 4 inches and a maximum distance of the footing thickness. The footings extension is not required at intersections with other footings.

R602.10.11 Cripple wall bracing. Cripple walls shall be constructed in accordance with Section R602.9 and braced in accordance with this section. Cripple walls supporting bearing walls or exterior walls or interior braced wall panels as required in Section R403.1.2 shall be braced with the length and method of bracing used for the wall above in accordance with Tables R602.10.3(1) and R602.10.3(3), and the applicable adjustment factors in Table R602.10.3(2) or R602.10.3 (4), respectively, except the length of the cripple wall bracing shall be multiplied by a factor of 1.15. The distance between adjacent edges of *braced wall panels* shall be reduced from 20 feet (6096 mm) to 14 feet (4267 mm).

R602.10.11.2 Cripple wall bracing for Seismic Design Category D_2. In Seismic Design Category D_2, cripple walls supporting bearing walls or exterior walls or interior braced wall panels as required in Section R403.1.2 shall be braced in accordance with Tables R602.10.3(3) and R602.10.3(4).

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0602, filed 2/1/13, effective 7/1/13. Statutory Authority: Chapter 19.27 RCW. WSR 10-18-036, § 51-51-0602, filed 8/25/10, effective 9/25/10. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0602, 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 08-01-102, § 51-51-0602, filed 12/18/07, effective 4/1/08. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0602, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0612 Section R612—Exterior windows and doors.

R612.3 Testing and labeling. Exterior windows and sliding doors shall be tested by an approved independent laboratory, and bear a label identifying manufacturer, performance characteristics and approved inspection agency to indicate compliance with AAMA/WDMA/CSA 101/I.S.2/A440. Exterior side-hinged doors shall be tested and labeled as conforming to AAMA/WDMA/CSA 101/I.S.2/A440 or comply with Section R612.5.

EXCEPTIONS:
1. Decorative glazed openings.
2. Custom exterior windows and doors manufactured by a small business shall be exempt from all testing requirements in Section R612 provided they meet the applicable provisions of Chapter 24 of the International Building Code.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0612, filed 2/1/13, effective 7/1/13. Statutory Authority: Chapter 19.27 RCW. WSR 10-18-036, § 51-51-0612, filed 8/25/10, effective 9/25/10. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, amended and recodified as § 51-51-0612, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0613, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0702 Section R702—Interior covering.

R702.5 Other finishes. Wood veneer paneling and hardboard paneling shall be placed on wood or cold-formed steel framing spaced not more than 16 inches (406 mm) on center. Wood veneer and hardboard paneling less than 1/4-inch (6 mm) nominal thickness shall not have less than a 3/8-inch (10 mm) gypsum board backer. Wood veneer paneling not less than 1/4-inch (6 mm) nominal thickness shall conform to ANSI/HPVA HP-1. Hardboard paneling shall conform to ANSI/AHA A135.5. All structural panel components within the conditioned space such as plywood, particle board, wafer board and oriented strand board shall be identified as "EXPOSURE 1," "EXTERIOR" or "HUD-APPROVED."

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0702, filed 1/20/10, effective 7/1/10.]

WAC 51-51-0703 Section R703—Exterior covering.

R703.1 General. Exterior walls shall provide the building with a weather-resistant exterior wall envelope. The exterior wall envelope shall include flashing as described in Section R703.8.

R703.1.1 Water resistance. The exterior wall envelope shall be designed and constructed in a manner that prevents the accumulation of water within the wall assembly by providing a water-resistant barrier behind the exterior veneer as required by Section R703.2 and a means of draining water that enters the assembly to the exterior. Protection against condensation in the exterior wall assembly shall be provided in accordance with Section R702.7 of this code.

EXCEPTIONS:

1. A weather-resistant exterior wall envelope shall not be required over concrete or masonry walls designed in accordance with Chapter 6 and flashed according to Section R703.7 or R703.8.

2. Compliance with the requirements for a means of drainage, and the requirements of Section R703.2 and R703.8, shall not be required for an exterior wall envelope that has been demonstrated to resist wind-driven rain through testing of the exterior wall envelope, including joints, penetrations and intersections with dissimilar materials, in accordance with ASTM E 331 under the following conditions:

2.1. Exterior wall envelope test assemblies shall include at least one opening, one control joint, one wall/eave interface and one wall sill. All tested openings and penetrations shall be representative of the intended end-use configuration.

2.2. Exterior wall envelope test assemblies shall be at least 4 feet (1219 mm) by 8 feet (2438 mm) in size.

2.3. Exterior wall assemblies shall be tested at a minimum differential pressure of 6.24 pounds per square foot (299Pa).

2.4. Exterior wall envelope assemblies shall be subjected to a minimum test exposure duration of 2 hours.

The exterior wall envelope design shall be considered to resist wind-driven rain where the results of testing indicate that water did not penetrate: Control joints in the exterior wall envelope; joints at the perimeter of opening penetration; or intersections of terminations with dissimilar materials.

3. The requirement for a means of drainage shall not be construed to mean an air space cavity under the exterior cladding for an exterior wall clad with panel or lapped siding made of plywood, engineered wood, hardboard, or fiber cement. A water-resistive barrier as required by Section R703.2 and Table R703.4 will be required on exterior walls.

R703.8 Flashing. Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structure framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashing shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water resistive barrier for subsequent drainage.

2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.

3. Under and at the ends of masonry, wood or metal copings and sills.

4. Continuously above all projecting wood trim.

5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.

6. At wall and roof intersections.

7. At built-in gutters.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0703, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0703, 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 08-01-102, § 51-51-0703, filed 12/18/07, effective 4/1/08.]

WAC 51-51-0806 Section R806—Reserved.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0806, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0806, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.-020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-0806, filed 12/19/06, effective 7/1/07.]

WAC 51-51-0903 Section R903—Weather protection.

R903.4.1 Secondary (emergency overflow) drains or scuppers. Where roof drains are required, secondary emergency overflow drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. Overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains and having a minimum opening height of 4 inches (102 mm) shall be installed in the adjacent parapet walls with the inlet flow located 2 inches (51 mm) above the low point of the roof served. The installation and sizing of overflow drains, leaders and conductors shall comply with the plumbing code. Overflow drains shall discharge to an approved location.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-0903, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-0903, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1001 Section R1001—Masonry fireplaces.

R1001.7.1 Damper. Masonry fireplaces shall be equipped with a ferrous metal damper located at least 8 inches (203 mm) above the top of the fireplace opening. Dampers shall be installed in the fireplace or the chimney venting the fireplace, and shall be operable from the room containing the fireplace.

Fireplaces shall be provided with each of the following:

1. Tightly fitting flue dampers, operated by a readily accessible manual or approved automatic control.

EXCEPTION: Fireplaces with gas logs shall be installed in accordance with the International Mechanical Code Section 901, except that the standards for liquefied petroleum gas installations shall be NFPA 58 (Liquefied Petroleum Gas Code) and NFPA 54 (National Fuel Gas Code).

2. An outside source for combustion air ducted into the firebox. The duct shall be at least 6 square inches, and shall be provided with an operable outside air duct damper.

3. Site built fireplaces shall have tight fitting glass or metal doors, or a flue draft induction fan or as approved for

minimizing back-drafting. Factory built fireplaces shall use doors listed for the installed appliance.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1001, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1001, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1002 Section R1002—Masonry heaters.

R1002.2 Installation. Masonry heaters shall be installed in accordance with this section and shall be a masonry heater type approved by the department of ecology. Masonry heaters shall comply with one of the following:

1. Masonry heaters shall comply with the requirements of ASTM E 1602; or

2. Masonry heaters shall be *listed* and *labeled* in accordance with UL 1482 and installed in accordance with the manufacturer's installation instructions.

R1002.2.1 Combustion air and doors. Masonry heaters shall be provided with both of the following:

1. Primary combustion air ducted from the outside of the structure to the appliance.

2. Tight fitting ceramic glass or metal doors. Flue dampers, when provided, shall have an external control and when in the closed position shall have a net free area of not less than 5% of the flue cross sectional area.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1002, filed 2/1/13, effective 7/1/13.]

WAC 51-51-1004 Section R1004—Factory-built fireplaces.

R1004.1.1 Emission Standards for Factory-built Fireplaces. No new or used factory-built fireplace shall be installed in Washington state unless it is certified and labeled in accordance with procedures and criteria specified in ASTM E2558 Standard Test Method for determining particulate matter emission from fires in low mass wood burning fireplaces.

To certify an entire fireplace model line, the internal assembly shall be tested to determine its particulate matter emission performance. Retesting and recertifying is required if the design and construction specifications of the fireplace model line internal assembly change. Testing for certification shall be performed by a Washington state department of ecology (DOE) approved and U.S. Environmental Protection Agency (EPA) accredited laboratory.

R1004.1.2 Emission Standards for Certified Masonry and Concrete Fireplaces. Masonry and concrete fireplace model lines certified to Washington State Building Code Standard 31-2 prior to July 1, 2013, may retain certification provided the design and construction specifications of the fireplace model line internal assembly do not change.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1004, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-1004, filed 12/17/03, effective 7/1/04.]

WAC 51-51-1006 Section R1006—Exterior air supply.

R1006.2 Solid fuel burning appliances and fireplaces. Solid fuel burning appliances and fireplaces shall be provided with tight fitting metal or ceramic glass doors, and:

1. A source from outside the structure of primary combustion air, connected to the appliance as per manufacturer's specification. The air inlet shall originate at a point below the fire box. The duct shall be 4 inches or greater in diameter, not exceed 20 feet in length, and be installed as per manufacturer's instructions; or

2. The appliance and manufacturer's recommended combustion air supply, as an installed unit, shall be certified by an independent testing laboratory to have passed Test No. 11-Negative Pressure Test, Section 12.3, of ULC S627-M1984 "Space Heaters for Use with Solid Fuels," modified as follows:

Negative pressure of 8 Pascal shall be initially established with the chamber sealed and the air supply, if not directly connected to the appliance, closed off.

The air supply if not directly connected to the appliance, shall then be opened.

The maximum allowable air exchange rate from chamber leakage and intentional air supply for the unit (appliance with combustion air supply) in the test chamber is 3.5 air changes per hour, or 28 cfm (cubic feet of air per minute), whichever is less.

EXCEPTION: Combustion air may be supplied to the room in which the solid fuel burning appliance is located in lieu of direct ducting, provided that one of the following conditions is met:

1. The solid fuel burning appliance is part of a central heating plant and installed in an unconditioned space in conformance with the International Mechanical Code; or

2. The solid fuel burning appliance is installed in existing construction directly on a concrete floor or surrounded by masonry materials as in a fireplace. The combustion air terminus shall be located as close to the solid fuel burning appliance as possible and shall be provided with a barometric damper or equivalent. The combustion air source shall be specified by the manufacturer or no less than 4 inches in diameter or the equivalent in area or as approved.

R1006.4 Passageway. This section is not adopted.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1006, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1006, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1201 Section M1201—General.

M1201.1 Scope. The provisions of Chapters 12 through 24 shall regulate the design, installation, maintenance, alteration and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions within buildings. These chapters shall also regulate those mechanical systems, system components, equipment and appliances specifically addressed in this code.

EXCEPTION: The standards for liquefied petroleum gas installations shall be the 2011 Edition of NFPA 58 (Liquefied Petroleum Gas Code) and the 2012 Edition of ANSI Z223.1/NFPA 54 (National Fuel Gas Code).

M1201.3 Construction documents. The plans and specifications shall show in sufficient detail pertinent data and features of the materials, equipment and systems as herein governed including, but not limited to: Design criteria, size and type of apparatus and equipment, systems and equipment controls, provisions for combustion air to fuel burning appliances, and other pertinent data to indicate conformance with the requirements of this code.

M1201.4 Testing. At the discretion of the building official, flow testing may be required to verify that the mechanical system(s) satisfies the requirements of this code. Specific testing required by other sections of this code shall be performed. Flow testing may be performed using flow hoods 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 chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1201, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-1201, filed 12/19/06, effective 7/1/07.]

WAC 51-51-1301 Section M1301—General.

M1301.2 Identification. Each length of pipe and tubing and each pipe fitting utilized in a mechanical system shall bear the identification of the manufacturer.

EXCEPTION: The manufacturer identification for fittings and pipe nipples shall be on each piece or shall be printed on the fitting or nipple packaging or provided documentation.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1301, filed 2/1/13, effective 7/1/13.]

WAC 51-51-1302 Section M1302—Reserved.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1302, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1302, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1415 Section M1415—Reserved.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1415, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1415, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1501 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1501, 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 08-01-102, § 51-51-1501, filed 12/18/07, effective 4/1/08.]

WAC 51-51-1507 Section M1507—Mechanical ventilation.

M1507.1 General. Local exhaust and whole-house mechanical ventilation systems and equipment shall be designed in accordance with this section.

M1507.2 Recirculation of air. Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or to another dwelling unit and shall be exhausted directly to the outdoors. Exhaust air from bathrooms and toilet rooms shall not discharge into an attic, crawl space or other areas of the building.

M1507.3 Whole-house mechanical ventilation system. Whole-house mechanical ventilation systems shall be designed in accordance with Sections M1507.3.1 through M1507.3.3.

M1507.3.1 System design. Each dwelling unit or guestroom shall be equipped with a ventilation system complying with Section M1507.3.4, M1507.3.5, M1507.3.6 or M1507.3.7. Compliance is also permitted to be demonstrated through compliance with the International Mechanical Code.

M1507.3.2 Control and operation.

1. Location of controls. Controls for all ventilation systems shall be readily accessible by the occupant.

2. Instructions. Operating instructions for whole-house ventilation systems shall be provided to the occupant by the installer of the system.

3. Local exhaust systems. Local exhaust systems shall be controlled by manual switches, dehumidistats, timers, or other approved means.

4. Continuous whole-house ventilation systems. Continuous whole-house ventilation systems shall operate continuously. Exhaust fans, forced-air system fans, or supply fans shall be equipped with "fan on" as override controls. Controls shall be capable of operating the ventilation system without energizing other energy-consuming appliances. A label shall be affixed to the controls that reads "Whole House Ventilation (see operating instructions)."

5. Intermittent whole-house ventilation systems. Intermittent whole-house ventilation systems shall comply with the following:

5.1. They shall be capable of operating intermittently and continuously.

5.2. They shall have controls capable of operating the exhaust fans, forced-air system fans, or supply fans without energizing other energy-consuming appliances.

5.3. The ventilation rate shall be adjusted according to the exception in Section 403.8.5.1.

5.4. The system shall be designed so that it can operate automatically based on the type of control timer installed.

5.5. The intermittent mechanical ventilation system shall operate at least one hour out of every four.

5.6. The system shall have a manual control and automatic control, such as a 24-hour clock timer.

5.7. At the time of final inspection, the automatic control shall be set to operate the whole-house fan according to the schedule used to calculate the whole-house fan sizing.

5.8. A label shall be affixed to the control that reads "Whole House Ventilation (see operating instructions)."

M1507.3.2.1 Operating instructions. Installers shall provide the manufacturer's installation, operating instructions, and a whole-house ventilation system operation description.

M1507.3.3 Mechanical ventilation rate. The whole-house mechanical ventilation system shall provide outdoor air to each habitable space at a continuous rate of not less than that determined in accordance with Table M1507.3.3(1).

EXCEPTION: The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate prescribed in Table M1507.3.3(1) is multiplied by the factor determined in accordance with Table M1507.3.3(2).

Table M1507.3.3(1)
Continuous Whole-House Mechanical Ventilation System Airflow Rate Requirements

Dwelling Unit Floor Area (square feet)	NUMBER OF BEDROOMS				
	0 - 1	2 - 3	4 - 5	6 - 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 - 3,000	45	60	75	90	105
3,001 - 4,500	60	75	90	105	120
4,501 - 6,000	75	90	105	120	135
6,001 - 7,500	90	105	120	135	150
> 7,501	105	120	135	150	165

For SI: 1 square foot = 0.0929 m^2, 1 cubic foot per minute = 0.0004719 m^3/S.

Table M1507.3.3(2)
Intermittent Whole-House Mechanical Ventilation Rate Factors[a, b]

Run-Time Percentage in Each 4-Hour Segment	25%	33%	50%	66%	75%	100%
Factor[a]	4	3	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.

M1507.3.4 Whole-house ventilation using exhaust fans. This section establishes minimum prescriptive requirements for whole-house ventilation systems using exhaust fans. A system which meets all the requirements of this section shall be deemed to satisfy the requirements for a whole-house ventilation system.

M1507.3.4.1 Whole-house ventilation fans. Exhaust fans providing whole-house ventilation shall have a flow rating at 0.25 inches water gauge as specified in Table M1507.3.3(1). Manufacturers' fan flow ratings shall be determined according to HVI 916 or AMCA 210.

M1507.3.4.2 Fan noise. Whole-house fans located 4 feet or less from the interior grille shall have a sone rating of 1.0 or less measured at 0.1 inches water gauge. Manufacturer's noise ratings shall be determined as per HVI 915 (March 2009). Remotely mounted fans shall be acoustically isolated from the structural elements of the building and from attached duct work using insulated flexible duct or other approved material.

M1507.3.4.3 Fan controls. The whole-house ventilation fan shall meet the requirements of Section M1507.3.2 and M1507.3.2.1.

M1507.3.4.4 Outdoor air inlets. Outdoor air shall be distributed to each habitable space by individual outdoor air inlets. Where outdoor air supplies are separated from exhaust points by doors, provisions shall be made to ensure air flow by installation of distribution ducts, undercutting doors, installation of grilles, transoms, or similar means. Doors shall be undercut to a minimum of 1/2 inch above the surface of the finish floor covering.

Individual room outdoor air inlets shall:

1. Have controllable and secure openings;

2. Be sleeved or otherwise designed so as not to compromise the thermal properties of the wall or window in which they are placed;

3. Provide not less than 4 square inches of net free area of opening for each habitable space. Any inlet or combination of inlets which provide 10 cfm at 10 Pascals are deemed equivalent to 4 square inches net free area.

Inlets shall be screened or otherwise protected from entry by leaves or other material. Outdoor air inlets shall be located so as not to take air from the following areas:

1. Closer than 10 feet from an appliance vent outlet, unless such vent outlet is 3 feet above the outdoor air inlet.

2. Where it will pick up objectionable odors, fumes or flammable vapors.

3. A hazardous or unsanitary location.

4. A room or space having any fuel-burning appliances therein.

5. Closer than 10 feet from a vent opening of a plumbing drainage system unless the vent opening is at least 3 feet above the air inlet.

6. Attic, crawl spaces, or garages.

M1507.3.5 Whole-house ventilation integrated with a forced-air system. This section establishes minimum prescriptive requirements for whole-house ventilation systems integrated with forced-air ventilation systems. A system which meets all the requirements of this section shall be deemed to satisfy the requirements for a whole-house ventilation system.

M1507.3.5.1 Integrated whole-house ventilation systems. Integrated whole-house ventilation systems shall provide outdoor air at the rate calculated using Section M1507.3.3. Integrated forced-air ventilation systems shall distribute outdoor air to each habitable space through the forced-air system ducts. Integrated forced-air ventilation systems shall have an outdoor air inlet duct connecting a terminal element on the outside of the building to the return air plenum of the forced-air system, at a point within 4 feet upstream of the air handler. The outdoor air inlet duct connection to the return air stream shall be located upstream of the forced-air system blower and shall not be connected directly into a furnace cabinet to prevent thermal shock to the heat exchanger. The system will be equipped with a motorized damper connected to the automatic ventilation control as specified in Section M1507.3.2. The required flow rate shall be verified by field testing with a flow hood or a flow measuring station.

M1507.3.5.2 Ventilation duct insulation. All supply ducts in the conditioned space shall be insulated to a minimum of R-4.

M1507.3.5.3 Outdoor air inlets. Inlets shall be screened or otherwise protected from entry by leaves or other material. Outdoor air inlets shall be located so as not to take air from the following areas:

1. Closer than 10 feet from an appliance vent outlet, unless such vent outlet is 3 feet above the outdoor air inlet.
2. Where it will pick up objectionable odors, fumes or flammable vapors.
3. A hazardous or unsanitary location.
4. A room or space having any fuel-burning appliances therein.
5. Closer than 10 feet from a vent opening of a plumbing drainage system unless the vent opening is at least 3 feet above the air inlet.
6. Attic, crawl spaces, or garages.

M1507.3.6 Whole-house ventilation using a supply fan. This section establishes minimum prescriptive requirements for whole-house ventilation systems using an inline supply fan. A system which meets all the requirements of this section shall be deemed to satisfy the requirements for a whole-house ventilation system.

M1507.3.6.1 Outdoor air. Supply fan ventilation systems shall distribute outdoor air to each habitable space through the forced-air system ducts or through dedicated ducts to each habitable space. Supply fans shall have the capacity to provide the amount of outdoor air specified in Table M1507.3.3(1) at 0.40 inches water gauge as per HVI 916. The outdoor air must be filtered before it is delivered to habitable spaces. The filter may be located at the intake device, in line with the fan, or, in the case of a connection to the return plenum of the air handler, using the furnace filter. An outdoor air inlet shall be connected to either the supply or return air stream.

M1507.3.6.2 Ducts. An outdoor air inlet duct connection to the supply air stream shall be located downstream of the forced-air system blower. An outdoor air inlet duct connection to the return air stream shall be located at least 4 feet upstream of the forced-air system blower and its filter. Neither type of duct shall be connected directly into a furnace cabinet to prevent thermal shock to the heat exchanger. The outdoor air inlet duct shall be prescriptively sized in accordance with Table M1507.3.6.2. The terminal element on the outside of the building shall be sized 2 inches in diameter larger than the outdoor air inlet duct.

Table M1507.3.6.2
Prescriptive Supply Fan Duct Sizing

Supply Fan Tested cfm at 0.40" wg		
Specified Volume from Table 1507.3.3(1)	**Minimum Smooth Duct Diameter**	**Minimum Flexible Duct Diameter**
50 - 90 cfm	4 inch	5 inch
90 - 150 cfm	5 inch	6 inch
150 - 250 cfm	6 inch	7 inch
250 - 400 cfm	7 inch	8 inch

M1507.3.6.3 Dampers. The system shall be equipped with a back-draft damper and one of the following:

1. A calibrated manual volume damper installed and set to meet the measured flow rates specified in Table M1507.3.3(1) by field testing with a pressure gauge and/or following manufacturer's installation instructions; or
2. A manual volume damper installed and set to meet the measured flow rates specified in Table M1507.3.3(1) by field testing with a flow hood or a flow measuring station; or
3. An automatic flow-regulating device sized to the specified flow rates in Table M1507.3.3(1) which provides constant flow over a pressure range of 0.20 to 0.60 inches water gauge.

M1507.3.6.4 Ventilation duct insulation. All supply ducts in the conditioned space shall be insulated to a minimum of R-4.

M1507.3.6.5 Outdoor air inlets. Inlets shall be screened or otherwise protected from entry by leaves or other material. Outdoor air inlets shall be located so as not to take air from the following areas:

1. Closer than 10 feet from an appliance vent outlet, unless such vent outlet is 3 feet above the outdoor air inlet.
2. Where it will pick up objectionable odors, fumes or flammable vapors.
3. A hazardous or unsanitary location.
4. A room or space having any fuel-burning appliances therein.
5. Closer than 10 feet from a vent opening of a plumbing drainage system unless the vent opening is at least 3 feet above the air inlet.
6. Attic, crawl spaces, or garages.

M1507.3.7 Whole-house ventilation using a heat recovery ventilation system. This section establishes minimum prescriptive requirements for whole-house ventilation using a heat recovery ventilation system.

M1507.3.7.1 Heat recovery ventilation systems. All duct work in heat recovery systems shall be sized and installed per the manufacturer's instructions. System minimum flow rating shall be not less than that specified in Table M1507.3.3(1). Heat recovery ventilation systems shall have a filter on the upstream side of the heat exchanger in both the intake and exhaust airstreams with a minimum efficiency rating value (MERV) of 6.

M1507.3.7.2 Ventilation duct insulation. All supply ducts in the conditioned space installed upstream of the heat exchanger shall be insulated to a minimum of R-4.

M1507.3.7.3 Outdoor air inlets. Inlets shall be screened or otherwise protected from entry by leaves or other material. Outdoor air inlets shall be located so as not to take air from the following areas:

1. Closer than 10 feet from an appliance vent outlet, unless such vent outlet is 3 feet above the outdoor air inlet.
2. Where it will pick up objectionable odors, fumes or flammable vapors.
3. A hazardous or unsanitary location.
4. A room or space having any fuel-burning appliances therein.
5. Closer than 10 feet from a vent opening of a plumbing drainage system unless the vent opening is at least 3 feet above the air inlet.
6. Attic, crawl spaces, or garages.

M1507.4 Local exhaust. Local exhaust shall be provided in each kitchen, bathroom, water closet, laundry room, indoor swimming pool, spa, and other rooms where water vapor or cooking odor is produced. *Local exhaust systems* shall be designed to have the capacity to exhaust the minimum air flow rate determined in accordance with Table M1507.4.

Table M1507.4
Minimum Required Local Exhaust Rates
For One- and Two-Family Dwellings

Area to Be Exhausted	Exhaust Rates
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms - Toilet rooms Laundry rooms, indoor swimming pools, and spas	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

For SI: 1 cubic foot per minute = 0.0004719 m^3/s.

M1507.4.1 Local exhaust fans. Exhaust fans providing local exhaust shall have a minimum fan flow rating not less than 50 cfm at 0.25 inches water gauge for bathrooms, laundries, or similar rooms and 100 cfm at 0.25 inches water gauge for kitchens. Manufacturers' fan flow ratings shall be determined as per HVI 916 (April 1995) or AMCA 210.

EXCEPTION: Where a range hood or down draft exhaust fan is used to satisfy the local exhaust requirements for kitchens, the range hood or down draft exhaust shall not be less than 100 cfm at 0.10 inches water gauge.

M1507.4.2 Local exhaust controls. Local exhaust systems shall be controlled by manual switches, dehumidistats, timers, or other approved means. Local exhaust system controls shall be readily accessible.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1507, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1507, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1508 Section M1508—Reserved.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1508, 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 12-07-019, § 51-51-1508, filed 3/12/12, effective 4/12/12. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1508, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1600 Chapter 16—Duct systems.

M1601.1.1 Above-ground duct systems. Above-ground duct systems shall conform to the following:

1. Equipment connected to duct systems shall be designed to limit discharge air temperature to a maximum of 250°F (121°C).
2. Factory-made air ducts shall be constructed of Class 0 or Class 1 materials as designated in Table M1601.1.1(1).
3. Fibrous duct construction shall conform to the SMACNA Fibrous Glass Duct Construction Standards or NAIMA Fibrous Glass Duct Construction Standards.
4. Minimum thickness of metal duct material shall be as listed in Table M1601.1.1(2). Galvanized steel shall conform to ASTM A 653. Metallic ducts shall be fabricated in accordance with SMACNA Duct Construction Standards Metal and Flexible.
5. Use of gypsum products to construct return air ducts or plenums is permitted, provided that the air temperature does not exceed 125°F (52°C) and exposed surfaces are not subject to condensation.
6. Duct systems shall be constructed of materials having a flame spread index not greater than 200.
7. Stud wall cavities and the spaces between solid floor joists shall not be used as a duct or an air plenum in new construction. For existing systems, stud wall cavities and the spaces between solid floor joists to be used as air plenums shall comply with the following:

7.1. These cavities or spaces shall not be used as a plenum for supply air.

7.2. These cavities or spaces shall not be part of a required fire-resistance-rated assembly.

7.3. Stud wall cavities shall not convey air from more than one floor level.

7.4. Stud wall cavities and joist-space plenums shall be isolated from adjacent concealed spaces by tight-fitting fire blocking in accordance with Section R602.8.

7.5. Stud wall cavities in the outside walls of building envelope assemblies shall not be utilized as air plenums.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1600, filed 2/1/13, effective 7/1/13. Statutory

Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1600, filed 1/20/10, effective 7/1/10.]

WAC 51-51-1700 Chapter 17—Combustion air.

M1701.1 Scope. Solid-fuel-burning appliances shall be provided with combustion air in accordance with the appliance manufacturer's installation instructions. Oil-fired appliances shall be provided with combustion air in accordance with NFPA 31. The methods of providing combustion air in this chapter do not apply to fireplaces, fireplace stoves and direct-vent appliances. The requirements for combustion and dilution air for gas-fired appliances shall be in accordance with Chapter 24.

Fireplaces shall comply with Chapter 10.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-1700, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-1700, filed 1/20/10, effective 7/1/10.]

WAC 51-51-2000 Chapter 20—Boilers and water heaters. Informational Note: Boilers, water heaters and pressure vessels are regulated by chapter 70.79 RCW and chapter 296-104 WAC in addition to the requirements of this code.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-2000, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-2000, filed 12/17/03, effective 7/1/04.]

WAC 51-51-2439 Reserved.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-2439, 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 08-01-102, § 51-51-2439, filed 12/18/07, effective 4/1/08.]

WAC 51-51-4400 Chapter 44—Referenced standards.

NFPA

720-12 Standard for the Installation of Carbon Monoxide (CO) Detectors and Warning Equipment R316.4

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-4400, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, amended and recodified as § 51-51-4400, filed 1/20/10, effective 7/1/10. Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-4300, filed 12/19/06, effective 7/1/07. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 04-01-109, § 51-51-4300, filed 12/17/03, effective 7/1/04.]

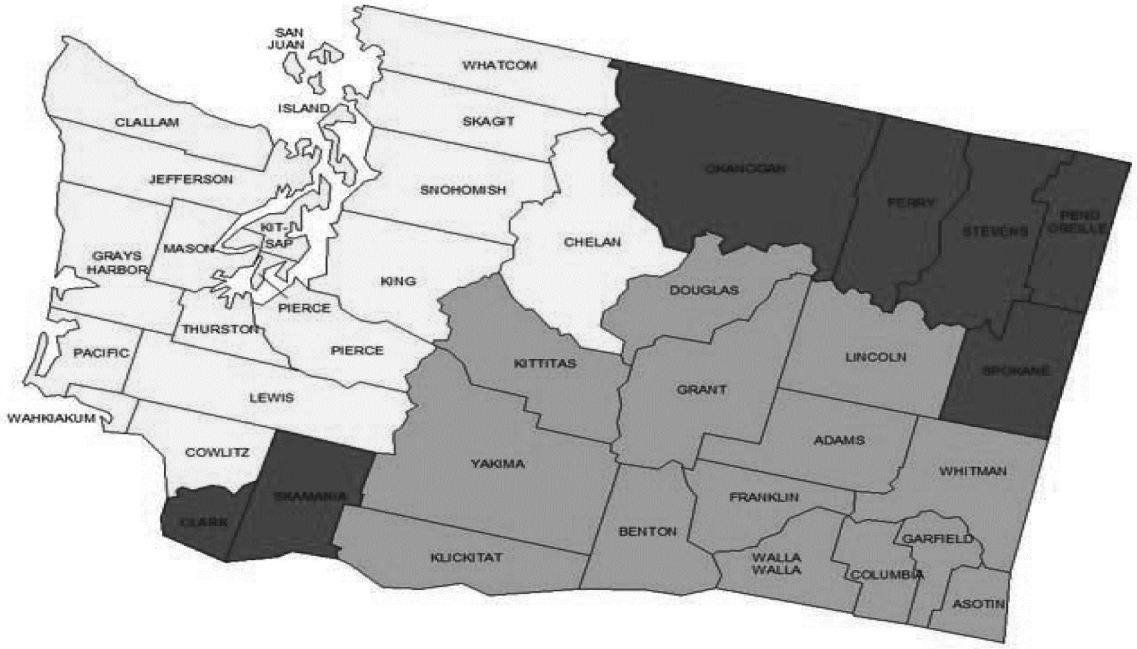
WAC 51-51-60101 Appendix F radon control methods.

AF101.1 General. This appendix contains requirements for new construction in jurisdictions where radon-resistant construction is required.

Inclusion of this appendix by jurisdictions shall be required in high radon potential counties as determined in Figure AF101 and as listed in Table AF101(1).

Unvented crawl spaces are not permitted in any high radon potential county. In other areas, requirements of this appendix apply to any structure constructed with unvented crawl spaces as specified in R408.3.

[**FIGURE** AF101 **EPA MAP OF RADON ZONES** LEGEND]



ZONE 1 HIGH POTENTIAL (GREATER THAN 4 pCi/L[a])**[Red/Darkest]**
ZONE 2 MODERATE POTENTIAL (FROM 2 TO 4 pCi/L)**[Orange/Midrange]**
ZONE 3 LOW POTENTIAL (LESS THAN 2 pCi/L)**[Yellow/Lightest]**

a. pCi/L standard for picocuries per liter of radon gas. EPA recommends that all homes that measure 4 pCi/L and greater be mitigated.

The United States Environmental Protection Agency and the United States Geological Survey have evaluated the radon potential in the United States and have developed a map of radon zones designed to assist building building officials in deciding whether radon-resistant features are applicable in new construction.

The map assigns each of the 3,141 counties in the United States to one of three zones based on radon potential. Each zone designation reflects the average short -term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. The radon zone designation of highest priority is Zone 1. Table 1 of this appendix lists the Zone 1 counties illustrated on the map. More detailed information can be obtained from state-specific booklets (EPA-402-R-93-021 through 070) available through State Radon Offices or from U.S. EPA Regional Offices.

TABLE AF101(1) HIGH RADON POTENTIAL (ZONE 1) COUNTIES[A]

WASHINGTON: Clark, Ferry, Okanogan, Pend Oreille, Skamania, Spokane, Stevens.

a. EPA recommends that this county listing be supplemented with other available state and local data to further understand the radon potential of Zone 1 areas.

[Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-60101, filed 12/19/06, effective 7/1/07.]

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

WAC 51-51-60103 Section AF103—Requirements.

AF103.1 General. The following construction techniques are intended to resist radon entry and prepare the building for post-construction radon mitigation, if necessary (see Figure AF102). These techniques are required in high radon potential counties designated in Table AF101(1).

[Statutory Authority: RCW 19.27.074, 19.27.020, and chapters 19.27 and 34.05 RCW. WSR 07-01-090, § 51-51-60103, filed 12/19/06, effective 7/1/07.]

WAC 51-51-60105 Appendix R—Dwelling unit fire sprinkler systems.

The design and installation of residential fire sprinkler systems shall be in accordance with the 2012 International Residential Code Section P2904 Dwelling Unit Fire Sprinkler Systems.

[Statutory Authority: RCW 19.27.031 and chapters 19.27 and 34.05 RCW. WSR 13-04-068, § 51-51-60105, filed 2/1/13, effective 7/1/13. Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-60105, filed 1/20/10, effective 7/1/10.]

WAC 51-51-60107 Appendix S—Fire sprinklers.

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

AS107.1 Fire sprinklers. An approved automatic fire sprinkler system shall be installed in new one-family and two-family dwellings and townhouses in accordance with Appendix R.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 10-03-098, § 51-51-60107, filed 1/20/10, effective 7/1/10.]