

**Chapter 173-433 WAC**  
**SOLID FUEL BURNING DEVICES**

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**WAC**

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**WAC 173-433-010 Purpose.** This chapter, promulgated under chapters 43.21A and 70.94 RCW, establishes emission standards, certification standards and procedures, curtailment rules, and fuel restrictions for solid fuel burning devices.

[Statutory Authority: Chapters 70.94 and 43.21A RCW. 88-01-056 (Order 87-44), § 173-433-010, filed 12/16/87.]

**WAC 173-433-020 Applicability.** The provisions of this chapter apply to solid fuel burning devices in all areas of the state of Washington.

[Statutory Authority: Chapters 70.94 and 43.21A RCW. 88-01-056 (Order 87-44), § 173-433-020, filed 12/16/87.]

**WAC 173-433-030 Definitions.** The definitions of terms contained in chapter 173-400 WAC are incorporated by reference. Unless a different meaning is clearly required by context, the following words and phrases as used in this chapter, shall have the following meanings:

(1) "Adequate source of heat" means the ability to maintain seventy degrees Fahrenheit at a point three feet above the floor in all normally inhabited areas of a dwelling.

(2) "Certified" means that a woodstove meets emission performance standards when tested by an accredited independent laboratory and labeled according to procedures specified by the EPA in "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990.

(3) "Coal-only heater" means an enclosed, coal burning appliance capable of and intended for residential space heating, domestic water heating, or indoor cooking, which has all of the following characteristics:

(a) An opening for emptying ash which is located near the bottom or the side of the appliance;

(b) A system which admits air primarily up and through the fuel bed;

(c) A grate or other similar device for shaking or

disturbing the fuel bed or power driven mechanical stoker; and

(d) The model is listed by a nationally recognized safety testing laboratory for use of coal only, except for coal ignition purposes.

(4) "EPA" means United States Environmental Protection Agency.

(5) "New woodstove" means a woodstove that has not been sold at retail, bargained, exchanged, or given away for the first time by the manufacturer, the manufacturer's dealer or agency, or a retailer, and has not been so used as to become what is commonly known as "second hand" within the ordinary meaning of that term.

(6) "Nonaffected pellet stove" means that a pellet stove has an air-to-fuel ratio equal to or greater than 35.0 when tested by an accredited laboratory in accordance with methods and procedures specified by the EPA in "40 CFR 60 Appendix A, REFERENCE METHOD 28A - MEASUREMENT OF AIR TO FUEL RATIO AND MINIMUM ACHIEVABLE BURN RATES FOR WOOD-FIRED APPLIANCES" as amended through July 1, 1990.

(7) "Retailer" means any person engaged in the sale of solid fuel burning devices directly to the public. A contractor who sells dwellings with solid fuel burning devices installed or a mail order outlet which sells solid fuel burning devices directly to the public is considered to be a solid fuel burning device retailer.

(8) "Seasoned wood" means wood of any species that has been sufficiently dried so as to contain twenty percent or less moisture by weight.

(9) "Solid fuel burning device" (same as solid fuel heating device) means a device that burns wood, coal, or any other nongaseous or nonliquid fuels, and includes any device burning any solid fuel except those prohibited by WAC 173-433-120. This also includes devices used for aesthetic or space-heating purposes in a private residence or commercial establishment, which has a heat input less than one million British thermal units per hour.

(10) "Treated wood" means wood of any species that has been chemically impregnated, painted, or similarly modified to prevent weathering and deterioration.

(11) "Woodstove" (same as "wood heater") means an enclosed solid fuel burning device capable of and intended for residential space heating and domestic water heating that meets the following criteria contained in "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990:

(a) An air-to-fuel ratio in the combustion chamber averaging less than 35.0, as determined by EPA Reference Method 28A;

(b) A useable firebox volume of less than twenty cubic feet;

(c) A minimum burn rate less than 5 kg/hr as determined by EPA Reference Method 28;

(d) A maximum weight of 800 kg, excluding fixtures and devices that are normally sold separately, such as flue pipe, chimney, and masonry components not integral to the appliance.

Any combination of parts, typically consisting of but not limited to: Doors, legs, flue pipe collars, brackets, bolts and other hardware, when manufactured for the purpose of being assembled, with or without additional owner supplied parts, into a woodstove, is considered a woodstove.

[Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-030, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-030, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 89-02-054 (Order 88-38), § 173-433-030, filed 1/3/89; 88-01-056 (Order 87-44), § 173-433-030, filed 12/16/87.]

**WAC 173-433-100 Emission performance standards. (1)**  
Woodstoves. On or before January 1, 1995, a person shall not advertise to sell, offer to sell, sell, bargain, exchange, or give away a new woodstove in Washington unless it has been tested to determine its emission performance and heating efficiency and certified and labeled in accordance with procedures and criteria specified in "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990. After January 1, 1995, woodstove sales shall comply with the requirements of subsection (3) of this section, Solid fuel burning devices.

(2) Fireplaces. After January 1, 1997, a person shall not advertise to sell, offer to sell, sell, bargain, exchange, or give away a factory built fireplace unless it meets the 1990 United States Environmental Protection Agency standards for woodstoves or equivalent standard that may be established by the state building code council by rule. Subsection (3) of this section shall not apply to fireplaces, including factory built fireplaces, and masonry fireplaces.

(3) Solid fuel burning devices. After January 1, 1995, a person shall not advertise to sell, offer to sell, sell, bargain, exchange, or give away a solid fuel burning device in Washington unless it has been certified and labeled in accordance with procedures and criteria specified in "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990, and meets the following particulate air contaminant emission standards and the test methodology of the United States Environmental Protection Agency in effect on January 1, 1991, or an equivalent standard under any test methodology adopted by the United States Environmental Protection Agency subsequent to such date:

(a) Two and one-half grams per hour for catalytic woodstoves; and

(b) Four and one-half grams per hour for all other solid fuel burning devices.

(c) For purposes of this subsection, "equivalent" shall mean the emissions limits specified in this subsection multiplied by a statistically reliable conversion factor determined by ecology that relates the emission test results from the methodology established by the United States Environmental Protection Agency prior to May 15, 1991, to the test results from the methodology subsequently adopted by that agency.

[Statutory Authority: Chapter 70.94 RCW and 501-506 ESHB 1028, 1991. 93-04-105 (Order 91-55), § 173-433-100, filed 2/3/93, effective 3/6/93. Statutory Authority: Chapter 70.94 RCW.

91-07-066 (Order 90-58), § 173-433-100, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-100, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 89-02-054 (Order 88-38), § 173-433-100, filed 1/3/89; 88-01-056 (Order 87-44), § 173-433-100, filed 12/16/87.]

**WAC 173-433-110 Opacity standards.** (1) A person shall not cause or allow emission of a smoke plume from any solid fuel burning device to exceed an average of twenty percent opacity for six consecutive minutes in any one-hour period.

(2) Statewide opacity standard. An authority shall not adopt or enforce an opacity level for solid fuel burning devices that is more stringent than the statewide standard.

(3) Test method and procedures. Methods and procedures specified by the EPA in "40 CFR 60 Appendix A reference method 9 - VISUAL DETERMINATION OF THE OPACITY OF EMISSIONS FROM STATIONARY SOURCES" as amended through July 1, 1990, shall be used to determine compliance with subsection (1) of this section.

(4) Enforcement. Smoke visible from a chimney, flue or exhaust duct in excess of the opacity standard shall constitute prima facie evidence of unlawful operation of an applicable solid fuel burning device. This presumption may be refuted by demonstration that the smoke was not caused by an applicable solid fuel burning device. The provisions of this requirement shall:

(a) Be enforceable on a complaint basis.

(b) Not apply during the starting of a new fire for a period not to exceed twenty minutes in any four-hour period.

(5) Education. Any person or retailer providing information on the operation of solid fuel burning devices, such as brochures, demonstrations, and public education programs, should include information that opacity levels of ten percent or less are attainable through proper operation.

[Statutory Authority: Chapter 70.94 RCW and 501-506 ESHB 1028, 1991. 93-04-105 (Order 91-55), § 173-433-110, filed 2/3/93, effective 3/6/93. Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-110, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-110, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 88-01-056 (Order 87-44), § 173-433-110, filed 12/16/87.]

**WAC 173-433-120 Prohibited fuel types.** A person shall not cause or allow any of the following materials to be burned in a solid fuel burning device:

- (1) Garbage;
- (2) Treated wood;
- (3) Plastic and plastic products;
- (4) Rubber products;
- (5) Animal carcasses;
- (6) Asphaltic products;

- (7) Waste petroleum products;
- (8) Paints and chemicals; or
- (9) Any substance which normally emits dense smoke or obnoxious odors other than paper to start the fire, properly seasoned fuel wood, or coal with sulfur content less than 1.0% by weight burned in a coal-only heater.

[Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-120, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-120, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 89-02-054 (Order 88-38), § 173-433-120, filed 1/3/89; 88-01-056 (Order 87-44), § 173-433-120, filed 12/16/87.]

**WAC 173-433-130 General emission standards.** In addition to the general applicability of chapter 173-400 WAC to all emission sources;

(1) Emissions detrimental to persons or property. No person shall cause or permit the emission of any air contaminant from an identifiable solid fuel burning device, including any air contaminant whose emission is not otherwise prohibited by this chapter, if the air contaminant emission causes detriment to the health, safety, or welfare of a person, plant or animal, or causes damage to property or business.

(2) Odors. Any person who shall cause or allow the generation of any odor from any solid fuel burning device which may interfere with any other property owner's use or enjoyment of his property must use recognized good practice and procedures to reduce these odors to a reasonable minimum.

[Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-130, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-130, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 89-02-054 (Order 88-38), § 173-433-130, filed 1/3/89.]

**WAC 173-433-140 Impaired air quality criteria.** Impaired air quality shall be determined by ecology or an authority in accordance with the following criteria:

(1) "First stage impaired air quality" - the first stage indicates the presence of:

(a) Particulate matter ten microns and smaller in diameter ( $PM_{10}$ ) at or above an ambient level of seventy-five micrograms per cubic meter; or

(b) Carbon monoxide at or above an ambient level of eight parts of contaminant per million parts of air by volume (ppm).

(2) "Second stage impaired air quality" - the second stage indicates the presence of particulate matter ten microns and smaller in diameter ( $PM_{10}$ ) at or above an ambient level of one hundred five micrograms per cubic meter.

(3) On or after July 1, 1995, if an authority has

geographically limited the use of solid fuel burning devices as specified under WAC 173-433-150(6), a single stage of impaired air quality will apply within the geographical area defined by the authority. A single stage of impaired air quality indicates the presence of:

(a) Particulate matter ten microns and smaller in diameter ( $PM_{10}$ ) at or above an ambient level of ninety micrograms per cubic meter; or

(b) Carbon monoxide at or above an ambient level of eight parts of contaminant ppm.

(4) Acceptable ambient air quality measurement methods.

(a) Particulate matter ten microns and smaller in diameter ( $PM_{10}$ ).

(i) Procedures specified by the EPA in "40 CFR 50, APPENDIX J - REFERENCE METHOD FOR THE DETERMINATION OF PARTICULATE MATTER AS  $PM_{10}$  IN THE ATMOSPHERE" as amended through July 1, 1990, shall be used to gather reference ambient  $PM_{10}$  data on a twenty-four-hour average.

(ii) More timely ambient  $PM_{10}$  measurement methods may be utilized to evaluate air quality impairment if accepted and approved by ecology. Any alternative method for evaluating air quality impairment for the purpose of curtailing solid fuel burning device use must be done at the same location and in parallel to the reference method, and must be related to the reference method by a mathematical relationship with a correlation coefficient of no less than 0.85.

(b) Carbon monoxide (CO) must be measured on an eight-hour average in accordance with procedures specified by the EPA in "40 CFR 50, APPENDIX C - REFERENCE METHOD FOR THE DETERMINATION OF CARBON MONOXIDE IN THE ATMOSPHERE (NON-DISPURISIVE INFRARED PHOTOMETRY)" as amended through July 1, 1990.

(c) All monitors used to measure  $PM_{10}$  for evaluation of air quality impairment due to solid fuel burning device use must be sited in accordance with EPA siting criteria in or near affected residential areas.

[Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-140, filed 3/20/91, effective 4/20/91.]

**WAC 173-433-150 Curtailment.** (1) Whenever ecology or an authority has declared the first stage of impaired air quality for a geographical area a person in a residence or commercial establishment within that geographical area with an adequate source of heat other than a solid fuel burning device shall not operate any solid fuel burning device, unless the solid fuel burning device is one of the following:

(a) A nonaffected pellet stove; or

(b) A woodstove certified and labeled by the EPA under "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990; or

(c) A woodstove meeting the "Oregon Department of Environmental Quality Phase 2" emissions standards contained in Subsections (2) and (3) of Section 340-21-115, and certified in accordance with "Oregon Administrative Rules, Chapter 340, Division 21 - Woodstove Certification" dated November 1984.

(2) Whenever ecology or an authority has declared the second stage of impaired air quality for a geographical area a person in

a residence or commercial establishment within that geographical area with an adequate source of heat other than a solid fuel burning device shall not operate any solid fuel burning device.

(3) Whenever ecology has declared an air pollution episode at a level above forecast a person in a residence or commercial establishment within that geographical area with an adequate source of heat other than a solid fuel burning device shall not operate any solid fuel burning device.

(4) The following matrix graphically illustrates the applicability of different types of solid fuel burning devices to the provisions of subsections (1) through (3) of this section:

Burn Condition  Type of Device	Impaired Air Quality		Episode	
	First Stage	Second Stage	Forecast	Alert, Warning, or Emergency
Pellet Stove (nonaffected)	OK	NO	OK	NO
EPA Certified Woodstove	OK	NO	OK	NO
DEQ Phase 2 Woodstove	OK	NO	OK	NO
EPA Exempted Device	NO	NO	OK	NO
All Other Devices	NO	NO	OK	NO

NOTES: "OK" indicates that the device may be operated  
 "NO" indicates that the device may not be operated

(5) On or after July 1, 1995, an authority may prohibit use of solid fuel burning devices within specific geographical areas:

(a) The following factors shall be considered in the exercise of this limitation:

(i) The contribution of solid fuel devices that do not meet the standards set forth in "40 CFR 60 Subpart AAA -Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990, to nonattainment of national ambient air quality standards;

(ii) The population density of the applicable geographical area; and

(iii) The public health effects of the use of solid fuel devices which do not meet the standards set forth in "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990.

(b) The following solid fuel devices are exempted from this limitation:

(i) Fireplaces;

(ii) Woodstoves certified and labeled by the EPA under "40 CFR 60 Subpart AAA - Standards of Performance for Residential Wood Heaters" as amended through July 1, 1990; or

(iii) Nonaffected pellet stoves.

(c) An authority shall allow an exemption from this subsection for low-income persons who reside in the geographical area affected by this subsection.

(6) On or after July 1, 1995, whenever an authority has

declared impaired air quality in accordance with criteria contained in WAC 173-433-140(3) for a geographical area defined under subsection (5) of this section, a person in a residence or commercial establishment within that geographical area shall not operate any solid fuel burning device.

(7) A person responsible for an applicable solid fuel burning device already in operation at the time an episode is declared shall withhold new solid fuel for the duration of the episode. A person responsible for an applicable solid fuel burning device already in operation at the time impaired air quality is declared shall withhold new solid fuel for the duration of the impaired air quality. Smoke visible from a chimney, flue or exhaust duct after three hours has elapsed from the declaration of the episode or impaired air quality shall constitute prima facie evidence of unlawful operation of an applicable solid fuel burning device. This presumption may be refuted by demonstration that the smoke was not caused by a solid fuel burning device.

(8) Ecology, authorities, health departments, fire departments, or local police forces having jurisdiction in the area may enforce compliance with the above solid fuel burning device curtailment rules after three hours has elapsed from the declaration of the episode or impaired air quality.

[Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-150, filed 3/20/91, effective 4/20/91. Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-150, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 88-01-056 (Order 87-44), § 173-433-150, filed 12/16/87.]

**WAC 173-433-170 Retail sales fee.** Fees can be found in chapter 173-455 WAC.

[Statutory Authority: RCW 70.94.181, [70.94.]152, [70.94.]331, [70.94.]650, [70.94.]745, [70.94.]892, [70.94.]011. 07-19-005 (Order 07-10), § 173-433-170, filed 9/6/07, effective 10/7/07. Statutory Authority: Chapter 70.94 RCW and 501-506 ESHB 1028, 1991. 93-04-105 (Order 91-55), § 173-433-170, filed 2/3/93, effective 3/6/93. Statutory Authority: Chapter 70.94 RCW. 91-07-066 (Order 90-58), § 173-433-170, filed 3/20/91, effective 4/20/91. Statutory Authority: Chapters 70.94 and 43.21A RCW. 89-02-054 (Order 88-38), § 173-433-170, filed 1/3/89.]

**WAC 173-433-200 Regulatory actions and penalties.** A person in violation of this chapter may be subject to the provisions of WAC 173-400-230 Regulatory actions and WAC 173-400-240 Criminal penalties.

[Statutory Authority: RCW 70.94.331. 90-19-062 (Order 90-10), § 173-433-200, filed 9/17/90, effective 10/18/90. Statutory Authority: Chapters 70.94 and 43.21A RCW. 88-01-056 (Order 87-44), § 173-433-200, filed 12/16/87.]