Chapter 173-433 WAC
SOLID FUEL BURNING DEVICES

WAC 173-433-010 Purpose. This chapter, promulgated under chapters 43.21A and 70.94 RCW, establishes the following for solid fuel burning devices:

- Emission standards;
- Certification standards and procedures;
- Fuel restrictions;
- Operation restrictions during impaired air quality burn bans; and
- Criteria for prohibiting the use of solid fuel burning devices that are not certified.

[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-010, filed 1/23/14, effective 2/23/14. Statutory Authority: Chapters 70.94 and 43.21A RCW. WSR 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. WSR 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 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. "Area at risk for nonattainment" means an area where the three-year average of the annual ninety-eighth percentile of twenty-four hour PM-2.5 levels is greater than twenty-nine micrograms per cubic meter based on monitoring data for 2008-2010. Ecology processed all statewide data according to methods defined in 40 C.F.R. Part 50 Appendix N and determined that the following areas are at risk for non-attainment:

- Darrington;
- Marysville;
- Tacoma-Pierce County Nonattainment Area as described in 40 C.F.R. 81.348;
- Yakima.

(1/23/14)
directly to the public is considered to be a solid fuel burning device retail.

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

(13) "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.

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

(15) "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 C.F.R. 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.


[WAC 173-433-110 Opacity standards. (1) Statewide opacity standard. (a) A person must 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.

(b) A local air authority must not adopt or enforce an opacity level for solid fuel burning devices that is more stringent than the statewide standard.

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

(3) Enforcement. Smoke visible from a chimney, flue or exhaust duct in excess of the opacity standard constitutes 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.

(4) 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.


[WAC 173-433-100 Emission performance standards. (1) Woodstoves. Woodstove sales must comply with the requirements of subsection (3) of this section, Solid fuel burning devices.

(2) Fireplaces. A person must not advertise to sell, offer to sell, sell, bargain, exchange, or give away a factory built fireplace unless it meets the 1990 EPA standards for woodstoves or equivalent standard that may be established by the state building code council by rule. Subsection (3) of this section does not apply to fireplaces, including factory built fireplaces, and masonry fireplaces.

(3) Solid fuel burning devices. A person must 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 C.F.R. 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 EPA in effect on January 1, 1991, or an equivalent standard under any test methodology adopted by the EPA 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" means 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 EPA prior to May 15, 1991, to the test results from the methodology subsequently adopted by that agency.

WAC 173-433-120 Prohibited fuel types. A person must 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.

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.

WAC 173-433-140 Criteria for impaired air quality burn bans. Ecology or a local air authority may call an impaired air quality burn ban as follows:

1. Stage 1 impaired air quality burn ban:
   a. Ecology or the local air authority may call a stage 1 impaired air quality burn ban when they predict that the twenty-four hour average of PM-2.5 levels will reach or exceed thirty micrograms per cubic meter within seventy-two hours.
   b. Pierce, Snohomish, and Yakima counties each contain at least one area at risk for nonattainment. In these counties, the local air authority may call a stage 1 impaired air quality burn ban when they predict that the twenty-four hour average of PM-2.5 levels will reach or exceed thirty micrograms per cubic meter within seventy-two hours.

2. Stage 2 impaired air quality burn ban:
   a. Ecology or the local air authority may call a stage 2 impaired air quality burn ban when all of the following conditions exist:
      i. A stage 1 impaired air quality burn ban is already in effect and has not reduced the trend of rising PM-2.5 levels adequately.
      ii. The twenty-four hour average of PM-2.5 levels have already reached or exceeded twenty-five micrograms per cubic meter.
      iii. Ecology or the local air authority expects that PM-2.5 levels will remain above twenty-five micrograms per cubic meter for twenty-four hours or more from the time PM-2.5 levels reached the trigger in (a)(ii) of this subsection.
   b. Ecology or the local air authority may call a stage 2 impaired air quality burn ban without calling a stage 1 impaired air quality burn ban when all of the following conditions exist:
      i. The twenty-four hour average of PM-2.5 levels have reached or exceeded twenty-five micrograms per cubic meter.
      ii. PM-2.5 levels have risen rapidly.
      iii. Ecology or the local air authority predicts that the twenty-four hour average of PM-2.5 levels will exceed thirty-five micrograms per cubic meter within twenty-four hours.
      iv. Weather conditions alone are highly unlikely to help decrease PM-2.5 levels sufficiently.
   c. Pierce, Snohomish, and Yakima counties each contain at least one area at risk for nonattainment. In these counties, the local air authority may call a stage 2 impaired air quality burn ban without calling a stage 1 impaired air quality burn ban when all of the following conditions exist:
      i. The twenty-four hour average of PM-2.5 levels have reached or exceeded twenty-five micrograms per cubic meter.
      ii. PM-2.5 levels have risen rapidly.
      iii. The local air authority predicts that the twenty-four hour average of PM-2.5 levels will reach or exceed thirty-five micrograms per cubic meter within twenty-four hours.
      iv. Weather conditions alone are highly unlikely to help decrease PM-2.5 levels sufficiently.
   d. Ecology or the local air authority may call an impaired air quality burn ban for areas smaller than a county, when and where feasible.

WAC 173-433-150 Restrictions on operation of solid fuel burning devices. (1) Stage 1 impaired air quality burn ban:

   a. Except as described in (b) of this subsection, a person must not operate any solid fuel burning device during a stage 1 impaired air quality burn ban when all of the following apply:
      i. The solid fuel burning device is located in a residence or commercial establishment within the geographical area covered by the stage 1 impaired air quality burn ban.
• The residence or commercial establishment has an adequate source of heat other than a solid fuel burning device.

(b) A person meeting all of the conditions in (a) of this subsection must not operate any solid fuel burning device during a stage 1 impaired air quality burn ban unless the solid fuel burning device is one of the following:

(i) A nonaffected pellet stove; or

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

(iii) 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.

(c) Except as allowed by (b) of this subsection, a person already operating a solid fuel burning device when a stage 1 impaired air quality burn ban begins must withhold new solid fuel for the duration of the impaired air quality burn ban.

(2) Stage 2 impaired air quality burn ban:

(a) A person must not operate any solid fuel burning device during a stage 2 impaired air quality burn ban when all of the following apply:

<table>
<thead>
<tr>
<th>Type of Device</th>
<th>Impaired Air Quality Burn Ban</th>
<th>Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First Stage</td>
<td>Second Stage</td>
</tr>
<tr>
<td>Pellet Stove (nonaffected)</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>EPA Certified Woodstove</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>DEQ Phase 2 Woodstove</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>EPA Exempted Device</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>All Other Devices</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

NOTES: "OK" indicates that a person may operate the device
"NO" indicates that a person must withhold new fuel from the device

(5) Smoke visible from a chimney, flue or exhaust duct after three hours has elapsed from the declaration of the episode or impaired air quality burn ban constitutes prima facie evidence of unlawful operation of an applicable solid fuel burning device. A person may refute this presumption with a demonstration that the smoke was not caused by a solid fuel burning device.

(6) Ecology, local air authorities, health departments, fire departments, or local police forces having jurisdiction in the area may enforce compliance with the provisions of subsections (1) through (3) of this section.

WAC 173-433-155 Criteria for prohibiting solid fuel burning devices that are not certified. (1) After January 1, 2015, and after meeting the requirements in subsection (3) of this section, ecology or the local air authority may prohibit the use of solid fuel burning devices in a nonattainment area or an area with an approved PM-2.5 maintenance plan.

(2) Except as provided in subsection (3) of this section, the prohibition will prohibit the use of solid fuel burning devices that are not certified, even in the absence of an air quality episode or impaired air quality burn ban.

(3) Before prohibiting the use of solid fuel burning devices as allowed in subsections (1) and (2) of this section, ecology or a local air authority must:

(a) Allow exemptions from this subsection as described in RCW 70.94.477(2) and 70.94.477(6).

(b) Seek input from any city, county, or jurisdictional health department affected by the proposal to prohibit the use of solid fuel burning devices.
(c) Make the following written findings:

(i) The EPA has designated the area nonattainment for PM-2.5 or has approved a PM-2.5 maintenance plan for the area.

(ii) Emissions from solid fuel burning devices in the area are a major contributing factor for violating the national ambient air quality standard for PM-2.5.

(iii) The area has an adequately funded program to assist low-income households to secure an adequate source of heat.

(4) When both of the following are true:
   • The area is in ecology’s jurisdiction.
   • The legislative authority of a city or county for the area formally expresses concerns with the written findings required in subsection (3)(c) of this section.

Ecology will publish all of the following on the agency web site:

(a) The reasons for prohibiting the use of solid fuel burning devices.

(b) The agency’s responses to the concerns expressed by the city or county legislative authority.

(5) The responsibility for enforcement of the prohibition of the use of solid fuel burning devices resides solely with ecology or the local air authority.

(6) A city, county, or jurisdictional health department serving the area may agree to assist with enforcement activities.

(7) On or after June 7, 2012, and before January 1, 2015, ecology or the local air authority must provide assistance to households using solid fuel burning devices to reduce the emissions from those devices or change out to a lower emission device.

(8) Before the effective date of any prohibition, ecology or the local air authority must provide public education in the area regarding all of the following:
   (a) How households can reduce their emissions through cleaner burning practices.
   (b) The importance of respecting impaired air quality burn bans.
   (c) Opportunities for assistance in obtaining a cleaner device.

(9) In an area where the EPA has approved a PM-10 maintenance plan, ecology or the local air authority may prohibit the use of solid fuel burning devices when all of the following are true:
   (a) The PM-10 maintenance plan contained a prohibition on the use of solid fuel burning devices as a contingency measure.
   (b) The area has violated the PM-10 national ambient air quality standard.
   (c) The emissions from solid fuel burning devices are a major contributing factor to the violation of the PM-10 national ambient air quality standard.

[Statutory Authority: Chapter 70.94 RCW. WSR 14-04-013 (Order 12-04), § 173-433-155, filed 1/23/14, effective 2/23/14.]

**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. WSR 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. WSR 88-01-056 (Order 87-44), § 173-433-200, filed 12/16/87.]

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**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. WSR 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. WSR 93-04-105 (Order 91-55), § 173-433-170, filed 2/3/93, effective 3/6/93. Statutory Authority: Chapter 70.94 RCW. WSR 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. WSR 89-02-054 (Order 88-38), § 173-433-170, filed 1/3/89.]