



DEP INFORMATION SHEET

Regulation of Outdoor Wood Boilers

Effective Date: November 9, 2007
Amended: April 9, 2008

Contact: 1-800-452-1942 or 207-287-2437

HEATING APPLIANCES AFFECTED BY OUTDOOR WOOD BOILER RULES

Outdoor wood boilers (OWBs) are heating appliances that burn firewood and are located outside of the building which they are heating. The formal industry name for an OWB is "Outdoor Wood Fired Hydronic Heating Appliance." They are also known as outdoor wood furnaces and water stoves. Conventional OWBs consist of a firebox surrounded by a water jacket, a weatherproof cabinet and a short smokestack. Some outdoor wood boilers do not have a weatherproof cabinet and must be installed in an outbuilding such as a garage or shed. OWBs with a heat input of less than 3 million Btus per hour (MMBtu/Hr) are subject to regulation by the Maine Department of Environmental Protection (DEP). These regulations were effective November 9, 2007. Larger OWBs have to comply with different DEP regulations.

CHOOSING AND SITING AN OUTDOOR WOOD BOILER

A standard method to test and evaluate the emissions and efficiency of OWBs was established nationally in 2007 by the U.S. EPA. New boilers are being designed and tested to determine how clean and efficient they are. When boiler tests are published, they will appear at the federal EPA web site www.epa.gov/woodheaters. Outdoor wood boilers with emissions equal to or less than 0.60 pounds of particulate per 1 million Btu of fuel burned (lbs/MMBtu) will qualify for the EPA Outdoor Wood-Fired Heater program. Look for the "orange label" to check for the EPA certified emission rating.

As of April 1, 2008, Maine retailers must phase out high emitting units over the following year, and only restock with units that have an EPA certified particulate emission rating of no more than 0.60 lbs/MMBtu. By April 1, 2009, the sale of units with emissions higher than 0.60 lbs/MMBtu will be phased out completely. Starting April 1, 2010, further reductions to a 0.32 lbs/MMBtu emission limit will be required for all new units sold under Maine law.

Retailers must provide buyers with a copy of the DEP "Control of Emissions from Outdoor Wood Boilers" rules that contain the emission limits and setback requirements along with the owner's manual and additional written information.

SITE SETBACK REQUIREMENTS

OWB installations need to meet minimum setback requirements designed to protect public health. The setback distance required depends on the unit's emission rating, with reduced setbacks allowed for cleaner-burning OWB models. The setback table below lists the minimum distance an OWB unit needs to be from any neighboring property line or dwelling. Buyers should carefully consider whether their property configuration provides the necessary space to meet the setback requirements before purchasing a boiler unit.

<u>OWB Emission Rating</u> (in pounds per million BTUs or lbs/MMBtu)	<u>Minimum Setback Distances</u> <u>from Property Line OR from Dwelling</u>
0.32 lbs/MMBtu	50 feet OR 70 feet
0.60 lbs/MMBtu	100 feet OR 120 feet
>0.60 lbs/MMBtu (including uncertified OWBs)	250 feet OR 270 feet

If terrain conditions could complicate air flow patterns on a parcel of land (e.g. in a valley, hilly, or tall trees nearby), it may be necessary to install the OWB even farther away than the minimum setback distances to avoid costly changes that could be required later if a nuisance condition occurs when the boiler is operated.

MINIMUM STACK HEIGHT REQUIREMENTS

The minimum stack height for all OWB units is at least 10' from the ground. However, the stack height needs to be extended at least 2' higher than the peak of the building served by the OWB (or the nearest building in the case of a pool heater) if either of the following are met:

- 1) If an OWB, installed after 11/9/07, with a particulate emission rating greater than 0.60 lbs/MMBtu (or an uncertified OWB), is within 500' of any abutting residence; or
- 2) If an OWB, installed after 11/9/07, with a particulate emission rating of 0.60 lbs/MMBtu or less, is within 300' of any abutting residence.

If a residence is built on abutting property after the OWB is installed, the stack height will have to be increased to meet the criteria described above. Additional stack height requirements may be necessary in conditions where topography or other buildings restrict the dispersion of smoke and create a nuisance condition.

THIRD PARTY SALE OF USED OWB UNITS

The sale of used OWBs is allowed but the buyer must comply with the setback distances and stack height listed for the emission rating of the boiler. If the emission rate is not documented, the boiler must meet the criteria listed for an uncertified OWB.

LARGE OWBs AND COMMERCIAL INSTALLATIONS

OWBs that are larger than 350,000 Btu/hr, and all OWBs for commercial applications must have an engineering analysis to determine a number of factors that will determine the proper boiler size, stack height and other items specific to the particular installation and the particular site.

RAIN CAPS

No rain caps are allowed unless required by manufacturer specifications. Rain caps can restrict the flow of air and help to create a nuisance condition.

ALLOWED & PROHIBITED FUELS

Allowed Fuels: Only **CLEAN WOOD** or wood pellets from clean wood can be burned in OWBs. (Clean wood has no paint, stain or other types of coating or treatments with preservatives of any type.) Home heating oil, propane or natural gas may be used as auxiliary fuel in dual-fired OWBs designed to burn those types of fuel.

Prohibited Fuels: any wood that is not *clean*; garbage; tires; lawn clipping or yard waste; materials containing plastic; materials containing rubber; waste petroleum products; paints and paint thinners; chemicals; glossy or colored papers; construction & demolition debris; plywood; particleboard; salt water driftwood and other salt-water saturated materials; manure; animal carcasses; asphalt products; materials containing asbestos; materials containing lead, mercury, or other heavy or toxic metals; and coal (unless the OWB is specifically designed to burn coal).

VISIBLE EMISSION STANDARD & PROHIBITION ON NUISANCE CONDITIONS

No OWB, regardless of the date of installation, can cause or allow a smoke plume of 30% or greater opacity for more than two six-minute periods in any 3-hour period of time. Opacity is a visual measurement by an EPA- or DEP-certified smoke reader. It is a measure of the "thickness or density of the smoke" emitted from a stack. OWBs producing 30% or greater opacity need to modify operating practices to reduce air pollution problems. Ask for DEP's Operating Tips for OWBs by calling the number above.

No OWB, regardless of the date of installation, is allowed to operate when conditions cause any visible smoke plume to cross onto adjacent owner's land and buildings for 12 minutes or more in any hour. Sending smoke on adjacent land or buildings for 12 minutes or more is a nuisance and a violation of the regulation.

*For the full rules on controlling emissions from outdoor wood boilers, visit www.maine.gov/sos/cec/rules/06/096/096c150.doc
For more information on outdoor wood boiler emissions, visit www.maine.gov/dep/air/woodsmoke/woodcombustion.htm*

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