WARNING: Compliance Advisory from the NJ Department of Environmental Protection (NJDEP):

- Outdoor woodburning boilers in New Jersey must comply with NJAC 7:27-3, “Control and Prohibition of Smoke from Combustion of Fuel.”
- This regulation mandates that stationary indirect heat exchangers, such as outdoor woodburning boilers, produce no smoke, except for three minutes in any 30-minute period; not to include chimineas, outdoor fire pits, etc.
- NJDEP warns homeowners and Local Building Officials that operating an outdoor woodburning boiler at a residence will likely violate state regulations due to the requirement that no visible emissions are permitted.
- Failure to comply with the Air Pollution Control Act may lead to violations and penalties based on the nature of the offense.
- The Sussex County Department of Environmental and Public Health Services (SCDEPHS) is responsible for the investigation of nuisance complaints and the enforcement of state regulations, including NJAC 7:27-3.
- A copy of NJAC 7:27-3, “Control and Prohibition of Smoke from Combustion of Fuel” can be found at http://www.state.nj.us/dep/aqm/Sub03v2002-02-04.pdf.

Burn Smart

EPA Recommendations

The EPA recommends “a properly designed, installed, and correctly used outdoor wood-fired hydronic heater releases significantly less pollution into the environment. A fire that is burning properly produces little or no smoke from the chimney. If you see a lot of smoke coming from a chimney, that's air pollution. It can affect the health of everyone in your neighborhood.”

Follow ***Best Burn Practices*** and have your unit professionally installed to ensure its safety, proper performance, and compliance with state regulations.

For more information, visit our website at www.sussex.nj.us/health

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SUSSEX COUNTY DEPARTMENT OF ENVIRONMENTAL AND PUBLIC HEALTH SERVICES

OUTDOOR WOOD BOILERS

WHAT DO I NEED TO KNOW?

WHY SHOULD I BE CONCERNED ABOUT USING AN OUTDOOR WOOD BOILER?

1. Negative Health Effects from Wood Smoke

According to the US Environmental Protection Agency (EPA), smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic matter burn. The biggest health threat from smoke comes from fine particles (also called particulate matter or PM). These microscopic particles can get into your eyes and respiratory system, where they can cause health problems such as burning eyes, runny nose, and illnesses such as bronchitis.

Short-term exposures to fine particles can aggravate lung disease, causing asthma attacks and acute bronchitis, and may increase susceptibility to respiratory infections. Long-term exposures can also aggravate chronic heart and lung diseases, has been associated with reduced lung function and lung cancer, and in some cases, resulted in premature death for those with chronic illnesses.

2. Environmental Concerns

The operation of Outdoor Wood Boilers (OWBs) produces fine particulate matter and heavy plumes of smoke as a result of incomplete combustion, intermittent heat demand, the size of the units and their distance from dwellings.

Incomplete Combustion– The firebox of most units is surrounded by water, making complete combustion of wood nearly impossible. Many units run passed water pipes, also causing them to cool and put out flames before combustion can complete. Escaping gas cannot completely break down, resulting in the creation of smoke rich in fine particulate matter.

Intermittent Heat Demand– When a boiler's water temperature falls below set point, its combustion air damper opens and/or a small fan forces combustion air into the firebox. When water is heated back to upper set point, fan is turned off and/or combustion damper closes. When fire smolders, much of the smoke condenses on cold steel surfaces, forming creosote. When the thermostat calls for heat again, combustion air rekindles the fire, igniting the creosote, causing an initial plume of heavy smoke.

Size of the Units and Distance from Dwellings– A boiler connected to a moderate-size house will shut off frequently, especially during mild weather. When the unit is turned back on, it causes a plume of smoke to form.

3. Efficiency

According to one source, "when it comes to outside boilers, manufacturers have been known to make exaggerated performance claims. Several manufacturers quote of 90% combustion efficiency." No such claims would be made by a reliable manufacturer because it's a misleading statement for consumers. Net delivery is the measurement that should be considered. One study showed that EPA certified stoves have net delivered efficiencies between 60- 80% and conventional wood stoves measured between 40-65%. Look for new models that carry an orange tag. They have been tested by an EPA-accredited laboratory, are cleaner and pollute less than other models.

LOOK FOR THE ORANGE TAG.

Additional Resources

www.state.nj.us/dep

www.outdoorfurnacefacts.com

www.4cleanair.org

www.burningissues.org

www.lungusa.org

www.woodheat.org