

## Summary of Requirements for Wood-fired Hydronic Heaters

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### **SUMMARY OF ACTION**

On February 3, 2015, the U.S. Environmental Protection Agency (EPA) updated its clean air standards for residential wood heaters to make new heaters significantly cleaner and improve air quality in communities where people burn wood for heat. The updates, which are based on improved wood heater technology, strengthen the emissions standards for new woodstoves, while establishing the first-ever federal air standards for previously unregulated new wood heaters, including outdoor and indoor wood-fired boilers (also known as hydronic heaters), indoor wood-fired forced air furnaces, and single burn-rate woodstoves. The final rule, known as New Source Performance Standards (NSPS), will phase in emission limits over a five-year period, beginning this year. The standards apply only to new wood heaters and will not affect wood heaters already in use in homes.

### **ABOUT HYDRONIC HEATERS**

- Wood-burning hydronic heaters (also called outdoor wood boilers) are usually located outside the buildings they heat, in small sheds with short smokestacks. These units typically burn wood to heat liquid (water or a combination of water and antifreeze) that is circulated through pipes to provide heat and hot water to buildings such as homes, barns and greenhouses. Hydronic heaters sometimes are located indoors, and sometimes, they use other biomass as fuel (such as corn or wood pellets). EPA estimates that nearly 14,000 wood-fired hydronic heaters will be sold this year.
- Hydronic heaters previously were not covered by EPA's air emissions standards. Use of these heaters has increased in some areas of the country in recent years, leading to concerns about the health effects of the smoke they produce. In 2007, EPA launched a voluntary program to encourage manufacturers to make hydronic heaters cleaner.
- Through the voluntary Hydronic Heater Program, manufacturers have redesigned some models to make new units available to consumers that are 90 percent cleaner on average than unqualified models, based on laboratory testing.

### **REQUIREMENTS FOR NEW, CLEANER HYDRONIC HEATERS**

- Today's final rule builds on the voluntary program to ensure that all new wood-fired hydronic heaters will be cleaner, establishing particle pollution emissions limits for these heaters in two steps. Particle pollution (also called particulate matter or PM) is a major constituent of wood smoke.

- Step 1: The Step 1 PM emissions limit, effective in 2015, is identical to the current qualifying level for EPA’s voluntary Hydronic Heater Program. Most models that were “Phase 2” qualified (using EPA Method 28WHH) under the voluntary program automatically will be certified as meeting the Step 1 limit. This will reduce potential the potential for testing delays.
- To ease the transition to cleaner heaters, EPA’s final rule will allow hydronic heater retailers sell their existing inventory until December 31, 2015. After that date, heaters sold at retail must meet the Step 1 emissions limit in the final rule.
- In Step 2 (2020), hydronic heaters will have to meet stronger emissions limits (see table below).
- The rule does not apply to heaters that are fueled solely by gas, oil or coal.

<b>Emissions Limits and Compliance Deadlines for Hydronic Heaters</b>		
<b>Step</b>	<b>PM Limit</b>	<b>Compliance Date</b>
<b>Step 1</b>	<ul style="list-style-type: none"> <li>● 0.32 pounds per million Btu heat output (weighted average), with a cap of 18 grams per hour for individual test runs.</li> <li>● Limit is for crib testing. If tested with cordwood, emissions test method must be approved, and stoves must meet crib wood limit.</li> </ul>	60 days after final rule is published in the Federal Register
<b>Step 2</b>	<ul style="list-style-type: none"> <li>● 0.10 pounds per million Btu heat output for each burn rate</li> <li>● <i>Alternative limit:</i> 0.15 pounds per million Btu heat output for each burn rate. If tested with cordwood; method must be approved.</li> </ul>	5 years after the final rule is published (2020)

**DETERMINING COMPLIANCE**

- To improve compliance and consumer confidence, the final standards require testing and certification by internationally accredited laboratories and certification bodies. EPA will

review the test results and make them available to consumers on a website.

- Wood-burning hydronic heaters sold in the United States will be required to have a permanent label indicating they are EPA-certified to meet emission limits in the final rule. This label will signal to consumers that the heater meets EPA standards.
- Each model line subject to the rules will be required to demonstrate compliance through performance testing, similar to requirements of the 1988 wood stove regulations. Under that certification program, manufacturers have one representative appliance tested by an accredited laboratory to demonstrate compliance for an entire model line. This is a commonly used approach and will minimize testing costs for manufacturers.
- The final rule also includes test methods that manufacturers will have to use to determine PM emissions and demonstrate compliance for each emissions limit in the rule. Based on public comment on the proposed rule and additional review, EPA has determined that the agency does not yet have sufficient data to require hydronic heaters to be tested using fires that burn cordwood (split wood) at this time. Instead, manufacturers will be required to test emissions using fires that burn lumber assembled in standardized configurations known as “cribs” – the same type of testing used for the 1988 woodstove standards.
- EPA believes emissions testing using cordwood is important, because it presents a more realistic picture of emissions from wood heaters in daily use. The agency will allow manufacturers to test emissions using cordwood both for the 2015 (Step 1) and the 2020 (Step 2) emissions limits. Manufacturers choosing to test with cordwood will be required to have EPA approval of the test method.
- In addition, to encourage further development of cordwood test methods, EPA is including an alternative Step 2 emissions limit based on cordwood testing. Manufacturers may test using either cribs or cordwood in Step 2, and must meet the limit corresponding to the type of test they choose. (Manufacturers testing with cordwood for Step 1 must meet the same emissions limit as those testing using cribs.)
- Any manufacturer that tests hydronic heaters using cordwood will be allowed to use a special EPA label that will recognize that emissions from cordwood testing more closely reflect likely emissions from in-home use. Use of this label is voluntary.

**For additional information**

- For additional information about today’s final rule, including the text of the rule and additional fact sheets, visit: <http://www2.epa.gov/residential-wood-heaters> .