Minnesota Pollution Control Agency

A Guide to Air Quality Regulations for Residential Biomass Combustion

Air Quality/#1.32 • August 2007

This fact sheet includes a check list of Minnesota rules and regulations for burning wood and agricultural derived fuels at residences, and suggestions for complying with them. All Minnesota rules can be accessed by number at http://ros.leg.mn/revisor/pages/forms/getrule.php.

Before Installing a Unit

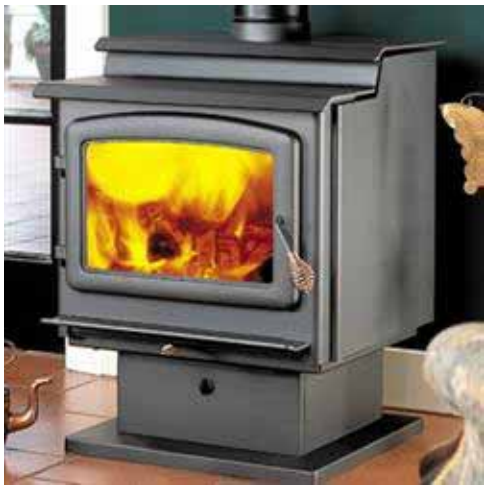
Determine if any township, city, or county restrictions apply, including building codes, setback requirements, and fire codes. Some Minnesota cities have established restrictions on outdoor wood boilers.

Burn Fuels Specified by Manufacturer

Do not burn trash, including: food, plastics, chemicals, treated wood, treated seeds or other hazardous materials in your unit. Burning these items releases toxic chemicals and is a health and safety hazard when breathing the pollutants during stove operation or when handling the ash. Small onsite waste combustor units are banned in Minnesota (Minn. R. 7011.1220). For more information on burning garbage see www.pca.state.mn.us/oea/reduce/burnbarrel.cfm.

Operate Units Cleanly

The emissions from poorly designed or operated units often result in nuisance complaints and could exceed Minn. state visible emission restrictions as described in Minn. R. 7011.0105 for an existing unit and Minn. R. 7011.0110 for a new unit. These rules limit the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. For tips on burning cleanly and smoke related health concerns, see www.pca.state.mn.us/air/woodsmoke/index.html.



Replacing Wood Stoves

Consider replacing wood stoves built before 1990 with a newer stove that will reduce particle pollution and increase efficiency. Newer stoves are required to meet Environmental Protection Agency's (EPA) Standards of Performance for New Residential Wood Heaters Title 40, Part 60, subpart AAA (Minn. R. 7011.2950). For more information see www.epa.gov/woodstoves/.

Size, Site, and Install Units Appropriately

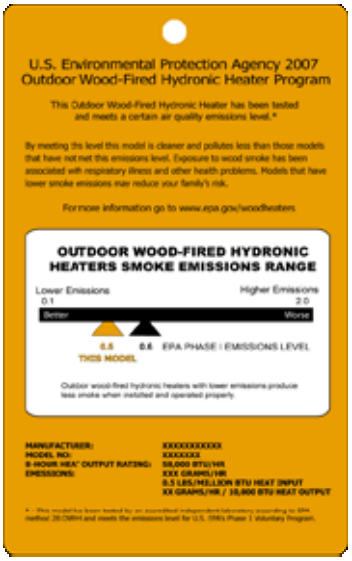
The stack of the unit should, at a minimum, be taller than the roofline of all nearby structures. Stacks that are too short do not allow the emissions to adequately disperse.

Minnesota Pollution Control Agency • 520 Lafayette Rd. N., St. Paul, MN 55155-4194 • www.pca.state.mn.us
651-296-6300 • 800-657-3864 • TTY 651-282-5332 or 800-657-3864 • Available in alternative formats

This is often the cause of nuisance complaints and may affect the health of you and your neighbors. Minn. R. 7011.0520 requires the owner or operator of any indirect heating equipment[1] (i.e. boiler) to install a stack of such height that pollutant concentrations at ground levels do not exceed any applicable ambient air quality standards. The National Ambient Air Quality Standard for particulate matter is of most concern and can be found at www.epa.gov/air/criteria.html. For more information on Minnesota ambient air rules, see Minn. rules chapter 7009.

Outdoor Wood Boilers

When they become available, consider outdoor wood boilers with EPA's orange tag – from the Outdoor Wood-fired Hydronic Heaters Program (www.epa.gov/woodheaters/what_epa_doing.htm) or a unit certified to meet the NESCAUM model rule (www.nescaum.org/topics/outdoor-hydronic-heaters). This is particularly important in populated areas or near neighbors. The table below shows the certification levels for these programs meet Minnesota's emission limits for new and existing residential size indirect heating equipment.



For more information comparing green house gas emission of residential heating options, see Air Emissions from Residential Heating: The Wood Heating Option Put into Environmental Perspective at http://oaspub.epa.gov/eims/eimsapi.dispdetail?deid=63619.

Residents do not need to apply for a state air permit because Minn. R. 7007.1300 includes the following as insignificant activities:

1. residential activities with typical emissions from residential structures
2. the production of hot water for on-site personal use not related to any industrial use
3. recreational activities using fireplaces, barbecue pits and cookers and kerosene fuel use

For more information on air permits and requirements for businesses call the MPCA Customer Assistance Center 651-297-2274 (1-800-646-6247) or see www.pca.state.mn.us/air/permits/index.html or www.pca.state.mn.us/publications/aq4-03.pdf.

Notes:

1. 7011.0500 DEFINITIONS.
Subp. 9. **Indirect heating equipment.** "Indirect heating equipment" means a furnace, boiler, or other unit of combustion equipment used in the process of burning fossil fuel[2] for the purpose of producing steam, hot water, hot air, or other hot liquid, gas, or solid, where the products of combustion do not have direct contact with the heated medium.

2. 7011.0500 DEFINITIONS. Subp. 7. **Fossil fuel.** "Fossil fuel" means natural gas, petroleum, coal, **wood**, peat, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

Outdoor Wood Boiler Program	Particulate Matter Limit (lb/mmBtu heat input)	Reference
EPA Phase I OWHH Program	0.60	www.epa.gov/woodheaters/pdfs/Partnership_Agreement_3_16_07.pdf
NESCAUM Phase I model rule	0.44	NESCAUM Model Regulation for Outdoor Hydronic Heaters. January 29, 2007. www.nescaum.org/topics/outdoor-hydronic-heaters
MN standard of performance for new indirect heating equipment[1] <250 million BTU/hr.	0.4	Minn. R. 7011.0515
MN standard of performance for existing indirect heating equipment[1] <250 million BTU/hr.	0.4 in St. Paul, Minneapolis and Duluth	Minn. R. 7011.0510
	0.6 elsewhere in Minn.	