

## Visible Emissions and Opacity

**DEC is proposing to lower opacity limits (visible emissions) on smoke plumes from solid-fuel heating devices during air advisories to 20%.**

### What are visible emissions?

Visible emissions are emissions you can see. They can be made of smoke, steam, particulate matter, and gases.

### What is opacity?

Opacity is a measure of how much light visible emissions block. High opacity means dirtier smoke is coming out of the chimney. High opacity smoke is a signal that your heating appliance is not operating efficiently and is producing too much pollution. There are easy steps you can take to burn more efficiently, reduce opacity, and produce less pollution.

### How is opacity measured?

Opacity is measured by determining the amount of background you can see through the smoke. Comparing these pictures to the smoke coming out of your chimney can help you estimate opacity.

### What factors affect opacity?

- Combustion efficiency
- Operating temperature
- Wood moisture content
- Airflow
- Size of the fire
- Type of appliance
- Age and condition of the appliance
- Types of fuels burned

### How can I reduce smoke opacity?

- Burn dry wood
- Only burn clean fuels
- If you must burn wet wood, mix it with cleaner burning compressed wood logs
- Increase airflow by opening the damper
- Don't let your fire smolder, build small, hot fires
- Maintain your appliance
- Inspect your stove and make any necessary repairs
- Consider upgrading to a newer appliance
- Consider using less polluting heaters that use pellets, propane, oil, or electricity instead



Photo courtesy of Alaska Environmental Resources, LLC



## Simulated smoke opacities

20%



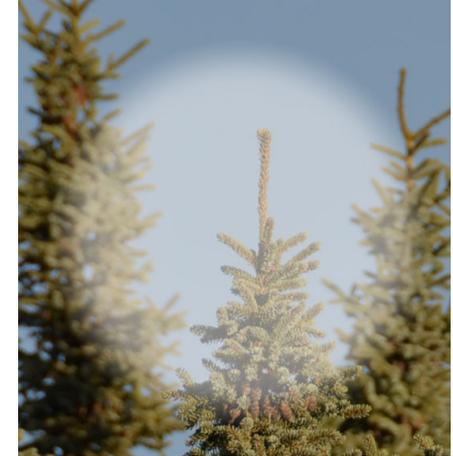
30%



40%



50%



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**Ambient PM<sub>2.5</sub> 24-hour  
Concentration ( $\mu\text{g}/\text{m}^3$ )**

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Air Advisory Called

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**Proposed  
Opacity Limits**

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20%

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