

## Impact on health and the environment

Smoke from wood burning, whether from a woodstove, fireplace, or campfire, is not as harmless as you might think.

- A single noncertified woodstove emits as many fine particles into the atmosphere in nine hours as a mid-size car that travels 18,000 kilometers.
- The fine particles produced by wood burning are extremely small (less than 2.5 micrometers in diameter), allowing them to enter deep into the respiratory tract and affect breathing.
- The pollutants emitted by burning wood can have harmful effects on health, especially on very young children, the elderly, and people suffering from asthma, emphysema, or heart problems, who are all more susceptible to air pollution.
- In residential neighborhoods where woodstove use is widespread, the concentration of fine particles, polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs) can reach high levels in certain weather conditions and depending on the lay of the land. This can sometimes be detected outside by an acrid and irritating odor that can make you feel short of breath.

## For more information

### Air quality

Ministère du Développement durable, de l'Environnement et des Parcs  
Air Quality Index and Info-Smog program  
[www.mddep.gouv.qc.ca](http://www.mddep.gouv.qc.ca)

Ville de Montréal – Réseau de surveillance de la qualité de l'air (Air quality surveillance network)  
[www.rsqa.qc.ca](http://www.rsqa.qc.ca)

Environment Canada  
[www.ec.gc.ca](http://www.ec.gc.ca)

Association pour l'air pur  
[www.alap.qc.ca](http://www.alap.qc.ca)

### Public health protection

Ministère de la Santé et des Services sociaux  
[www.msss.gouv.qc.ca](http://www.msss.gouv.qc.ca)

Direction de santé publique de Montréal  
[www.santepub-mtl.qc.ca](http://www.santepub-mtl.qc.ca)

### Fire prevention

Ministère de la Sécurité publique  
[www.securitepublique.gouv.qc.ca](http://www.securitepublique.gouv.qc.ca)

# Wood Heating

## How harmless is it?

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Ⓢ This paper contains 100% of post consumer fibre.

In the wake of the ice storm and rising fuel costs, many households have installed backup woodheating appliances. It is estimated that nearly one million Québec homes have a wood-burning appliance.

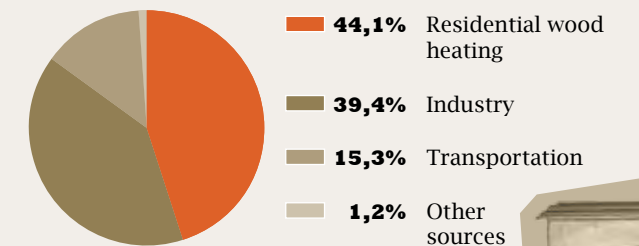
## Did you know?

While wood heating is firmly rooted in our culture and history, it is a major source of air pollution, both in cities and rural areas.

In Québec, residential wood heating accounts for nearly half of all fine particle emissions (44,1%) generated by human activity.

Fine particle emissions from residential wood heating are higher than those produced by industry, and three times higher than those generated by the transportation sector.

### Sources of fine particle emissions in Québec\*



\* Source: Inventaire québécois des émissions atmosphériques (IQEA), MDDEP, 2007

Smoke from wood-burning appliances can also find its way inside homes.

Développement durable,  
Environnement  
et Parcs

Québec

Québec



## Indoor air...

Wood burning is an additional source of exposure to toxic substances inside the home.

In addition to emitting pollutants into the air outside, wood-burning appliances can affect the quality of air inside homes when part of the combustion gases and fine particles make their way back indoors.

This kind of infiltration depends on:

- The type, age, and upkeep of the appliance
- Whether the appliance is installed properly
- The effectiveness of the gas and particle exhaust system
- How the appliance is used

To protect yourself and your family, install a carbon monoxide detector as well as a smoke detector. Carbon monoxide emitted during wood burning is toxic, odorless, and colorless, and can cause irreversible damage or even death.

## A few simple things you can do to limit your exposure to pollutants

### How

Avoid burning wood as your main source of heat.

Limit the use of fireplaces and woodstoves, *especially on smoggy days*.

Even where they are not prohibited, limit outdoor fires (campfires, leafburning, etc.).

#### When you heat with wood:

- Do not burn household waste such as plastics or treated or painted wood.
- Depending on the availability of resources, use hardwoods (oak, maple, or birch) that have dried for at least six months rather than soft woods like fir, pine, or spruce.

#### If you're thinking of buying a fireplace or woodstove:

- Make sure the appliance meets your actual needs, and avoid purchasing an appliance with an excessive heating capacity.
- Opt for an electric heating stove or fireplace. Some models can be inserted into existing appliances.

#### If you still decide to purchase a woodstove:

- Purchase a certified appliance that complies with the Regulation respecting wood-burning appliances.
- Choose an appliance whose specifications indicate the lowest particle emissions rate.

#### Installation

Comply with Canada's Installation Code for Solid Fuel-Burning Appliances.

#### Upkeep

Maintain, repair, or, if necessary, replace your wood-burning appliance.

### Why

Other heating methods such as electricity, natural gas, and fuel oil pollute less.

To reduce the amount of pollutants emitted into the air, both indoors and out.

To reduce the emission of highly toxic pollutants such as dioxins and furans.

To reduce the amount of pollutants emitted into the air and limit the buildup of creosote in flue pipes that is a common cause of chimney fires.

To conserve energy and to avoid the unnecessary emission of pollutants into the air, both indoors and out.

Electricity does not emit pollutants.

For example, new, certified woodstoves can emit up to 90% fewer particles than "conventional" woodstoves.

Proper installation is safer for you and your family and helps ensure your appliance operates as it should.

Over time, wood-burning appliances and chimneys become less airtight and begin to leak gas and particles. This not only reduces their efficiency, it can also deteriorate air quality inside your home.

Regular chimney cleaning promotes optimal combustion and minimizes the risk of a chimney fire.

## Regulation respecting wood-burning appliances

On September 1, 2009, the Regulation respecting wood-burning appliances came into effect, and with it the stipulation that all wood-burning appliances manufactured, sold, offered for sale, or distributed in Québec must be certified in compliance with Canadian Standards Association (CSA) or United States Environmental Protection Agency (USEPA) particle emissions standards.

- Every certified appliance must bear a permanent mark of conformity with one of these standards.
- Certified appliances emit up to ten times fewer fine particles and three times less other types of contaminants than conventional heating appliances.
- Among certified appliances, wood pellet stoves tend to have the lowest particle emissions.
- Since certified stoves are more efficient, they require less wood than conventional wood-burning stoves.

Please note that complementary municipal regulations may also exist. Before purchasing or installing a wood stove, please check with your local municipality.

To download this leaflet, consult the MDDEP website at [www.mddep.gouv.qc.ca](http://www.mddep.gouv.qc.ca) under the section *Air and Climate Change*.

For inquiries, call the Information Center at Ministère du Développement durable, de l'Environnement et des Parcs:

**Québec City region: 418-521-3830**

**Elsewhere in Québec (toll free): 1-800-561-1616**