

MASONRY HEATERS -- AN ENERGY SOLUTION THAT IS KIND TO THE ENVIRONMENT



A masonry heater is a different way to heat the home by burning a large charge of wood very rapidly and cleanly. It stores most of the heat in a large thermal mass of masonry radiating the heat for the next 24 to 30 hours.

Even though masonry heaters have been used for centuries in many European countries they are the space age way of burning wood. If they were used to heat homes throughout the US it would be a giant step toward energy independence as well as a major improvement in the environment.

Each year approximately 12,000 of these efficient heaters are built in Finland compared with approximately 650,000 fireplaces built in the

US and Canada of which only a tiny percentage are even remotely efficient resulting in air quality problems.

BENEFITS TO THE ENVIRONMENT

Masonry heaters are made of reusable materials including bricks and various types of stone. They are low maintenance and have a long lifecycle compared to woodstoves. They burn the combustion gases and particulate making them CO₂ neutral. In Denmark all stoves are required to burn with a carbon dioxide neutral emission. (This means stoves must not produce any more carbon dioxide than if the wood were allowed to rot in the forest). This helps to reduce greenhouse gases thereby lessening global warming. The combustion is so complete that you get only a vapor from the chimney similar to that of natural gas.

These heaters are extremely efficient burning about 60% as much wood as a woodstove to heat the same space. Older woodstoves and open fireplaces are a major source of pollution wasting tons of our valuable wood resources, sending

most of the heat up the chimney and spewing tons of particulate into the environment due to incomplete combustion of the wood.

Masonry heaters burn firewood a renewable fuel that is available in vast amounts. Firewood can provide an economic boost by providing extra cash income for farmers and landowners. Firewood is obtainable locally so fuel for transportation is also reduced. There is little environmental impact when sustainable growing practices are used.

Masonry heaters can also include a bake oven for cooking and baking and a hot water coil for heating domestic hot water. This can result in further savings of gas or electric during the winter months.



SAFETY

The safety of masonry heaters cannot be overemphasized. They are safer than open fireplaces, woodstoves, or even oil or natural gas heaters which can be a fire or explosion hazard. The danger of chimney fires is eliminated because they produce no creosote buildup and the tiny amount of fly ash can be swept out occasionally.

Woodstoves must burn 24 hours and are often left unattended when asleep or away. The outside temperature of the stove can reach 600 or 700 degrees F which can cause severe burns and can ignite combustibles. They also produce much creosote when the damper is turned down for a long burn.

A masonry heater is never a fire hazard and can be located up to 4 inches from combustible walls. It burns hot and clean for about 2 hours, but the outside surface temperature only reaches approximately 140 to 160 degrees F which cannot ignite combustibles or cause severe burns. The internal contra-flow design captures and stores heat in thousands of pounds of masonry and heats for 24 to 30 hours without a fire.

Insurance companies should encourage the use of masonry heaters for fire safety.

COMFORT

What a peaceful sleep knowing there is no unattended fire burning while you are asleep. It is wonderful to wake up to a warm comfortable home in the morning and not have to struggle trying to bring a woodstove back to life. Since masonry heaters use outside air, they effectively isolate the living space and provide longwave radiant heating for a healthy indoor environment (Outside air is now mandatory in most states).

Radiant heat does not circulate dust or dry the air like hot air systems. A short fire (about 2 hours) every 24 hours can provide continuous heat. In warmer climates, or in Spring and Fall, to take the chill off, smaller charges of wood are still burned fast and clean.

Masonry heaters operate without any electricity so with a bakeoven and/or a hot water coil they can provide heat, hot water and cooking during power outages for additional peace of mind.

Masonry heaters are efficient in both the coldest northern as well as the warmer southern climates and they complement modern energy efficient housing. While the initial cost is high, the long term fuel efficiency and benefits to our health and the environment make it a reasonable investment. In addition to all the other positive benefits including safety and efficiency, a masonry heater is a beautiful complement to any home.

Note: These heaters must be constructed by a trained and experienced heater mason.

Prepared by: Raymond D. Williams
 P.O. Box 1943
 Binghamton, NY 13902-1943
Email: osmial@echoes.net

Additional information and pictures can be found on the following websites:

<http://www.mha-net.org/html/gallery.htm>

<http://tempcast.com/>

<http://www.virginiaradiant.com/products.html>

<http://www.mha-net.org/html/mall.htm>

<http://www.pyromasse.com/portfoliolf.html>

<http://www.mainewoodheat.com>