



COLD CLIMATE HOUSING RESEARCH CENTER

CCHRC

Masonry Heaters



A masonry heater is a wood-burning appliance that has been around for over a thousand years. They have a long tradition in the colder parts of Europe where they were traditionally used as room heaters. However, modern versions have been designed to heat an entire home.

Similar to both a wood stove and a fireplace, the heater is built with refractory brick for the combustion chamber and flue passage. Wood is burned in a firebox with a metal door. A masonry heating system often includes an integral bake oven and a heated bench, and sometimes a domestic hot water coil.

A traditional fireplace has a straight flue passage to exit smoke immediately, whereas a masonry heater has a carefully designed flue passage where gasses will travel extended lengths, thus the combustion heat is absorbed by the mass of the heater and then radiates that heat into the living space over an extended amount of time. Unlike a wood stove, a masonry heater burns wood rapidly in one brief extremely hot fire. Because the wood is burned so quickly and near completely, it burns clean with little to no creosote.

A masonry heater can be expensive to design and build and requires experience in welding and masonry, among others skills. Due to their large mass, masonry heaters are very heavy. Also, the heater must be able to handle the stress of thousands of intense firing cycles and be able to last. Regardless, they are ideal for cold climate regions with a steady supply of wood. A masonry heater can reduce the use of other heating appliances thus saving fuel and money over the long term. Masonry heaters are not currently regulated by the EPA.