



Mr. Jarrett Jacinto
Attorney-Advisor
Office of Tax Policy
U.S. Department of Treasury
Washington, DC

Commissioner Charles Rettig
Internal Revenue Service
Washington, DC

Dear Mr. Jacinto and Commissioner Rettig:

I am writing on behalf of the Masonry Heater Association of North America (MHA) regarding the inclusion of biomass heaters in section 25 (d) of the IRS tax code - the investment tax credit (ITC). As the largest group of masonry heater professionals in North America we would like to offer our comments and expertise regarding this small but relevant industry that has persevered in North America since the late 1970's, bringing efficient, safe and clean burning technology from Northern European countries while adapting them to the living spaces of residential homes across the United States and Canada. It is estimated that between 400 – 500 masonry heaters are built a year in North America.

Who is the Masonry Heater Association?

The Masonry Heater Association was formed in 1984 to advance the technology of masonry heating in North America. MHA fulfills its mandate by sponsoring laboratory research into masonry heating and by working with building and environmental regulators to ensure the safe and appropriate use of the technology. The MHA also maintains a professional training and certification program to recognize the competency of qualified heater builders.

What is a masonry heater?

Masonry heaters are built of masonry, soapstone or ceramic components with a large mass and labyrinth of heat exchange channels. They have been in use in Europe for over 500 years where they have frequently been refined to produce lower emissions and higher efficiencies. Wood combustion researchers, Jaasma, Stern, and Shelton offer this description:

“The chief distinguishing feature of these wood-burning appliances is their ability to store heat. Combustion of a load of fuel is intended to occur very rapidly and at high temperatures, promoting improved combustion efficiency. The energy released by combustion is transferred to the large thermal mass of the appliance, and eventually heats the living space surrounding the appliance.”

*D. R. Jaasma, J. W. Shelton and C. H. Stern, *Final Report on Masonry Heater Emissions Test Method Development*, Wood Heating Alliance, Washington, 1990.



Schematic of factory-built, site assembled, soapstone masonry heater



Site assembled, factory-built soapstone masonry heater



Example of Austrian inspired Kachelofen style masonry heater custom built and site assembled

EN 15250

It is important to note that in the European Union, manufactured masonry heaters are tested to the standard EN 15250 and their efficiency ratings are reported in lower heat value (LHV) rather than the higher heating value (HHV) now being required in the BTU Act. A conversion formula used by the Oregon Department of Energy determined that an LHV efficiency of 83% is required to be equivalent to 75% HHV.

**European Committee for Standardization (CEN)*

***Oregon Dept. of Energy, attachment G*

Masonry heaters are not subject to the 2015 EPA New Source Performance Standard (NSPS)

In addition, the final rule will not apply to masonry heaters, the majority of which are custom-built on site. EPA had proposed to set emissions limits for these heaters but is not taking final action at this time to allow additional time for the development of emissions testing methods used to determine compliance. EPA will consider whether to finalize requirements for new masonry heaters in the future.

These standards are referred to as **New Source Performance Standards (NSPS) and are found in 40 CFR Part 60.*

Masonry heaters are typically very efficient heaters and currently do not require EPA Certification.

**<https://www.epa.gov/burnwise/types-wood-burning-appliances>*

Masonry heaters are included in the International Residential Code (IRC)

The construction and installation of masonry heaters are covered by the International Residential Code's Chapter 10 Section R1002 – Masonry Heaters. The section allows masonry heaters to be built and installed in two ways (R1002.2), either:

- 1) Custom built under ASTM E1602 – these masonry heaters are either site built in custom configurations or of manufactured core systems with custom veneers, or
- 2) Manufactured and tested under U.L. 1482 or CEN15250 and installed according to manufacturer's instructions.



Example of site-built masonry heater with manufactured core system and assembled on site

IRS Guidance:

Guidance for masonry heaters should consider that masonry heater efficiency ratings will not be found on EPA's database of certified heaters and are not included in EPA's official method for efficiency, CSA B415, due to the incompatibility of placing site-built masonry heaters on scales to measure efficiency.

In addition to accepting converted EN15250 efficiencies, the MHA suggests the IRS also accept efficiencies determined using the stack loss efficiency calculation spreadsheet, with gas average values substituted for 5-minute values. Site-built appliances cannot be put on a scale to determine burn rate, and both methods have shown good agreement in comparison testing.

MHA's Recommendation:

To include this unique family of residential heating devices in section 25(d) of the IRS tax code, MHA proposes that the following be required for inclusion in the tax credit:

- 1) Manufacturers supply a Certificate of Performance or an independent lab report showing that the tested model has efficiency over 75% HHV or 83% LHV.
- 2) Builders of custom masonry heaters supply a certificate of on-site testing, using portable testing devices and the CSA B-415 stack loss efficiency calculation spreadsheet. Since a scale cannot be used to determine instantaneous burn rate, substitute gas average values for 5-minute values.

Without such guidance one of the cleanest burning and most efficient wood burning appliances could be left out of this tax credit program.

Sincerely,

Chris Prior
President
Masonry Heater Association of North America