

Cast Iron Boilers should be cast out.

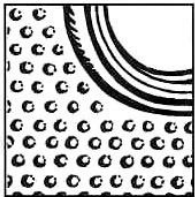
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IN general, people resist change. In the heating industry, we must abhor it. How else can the continued use of cast iron as a material to manufacture boilers be explained? Because compared to steel, cast iron is a far inferior material.

Consider the facts:

- Cast iron is basically steel with a high level of carbon impurities...and carbon doesn't translate into longer boiler life.
- Cast iron is a brittle material which can fracture under temperature shock. More than 60% of cast iron boiler failures are the result of cracked sections. Some manufacturers prefer that their cast iron boiler inefficiently maintain temperature because of concern for temperature shock or leakage due to expansion and contraction caused by temperature changes.
- Cast iron is significantly more vulnerable to deep pitting corrosion than steel. This was documented by the Batelle Institute during a study on the resistance to flue side products of corrosion on oil fired systems, conducted for the Department of Energy (Report BNL 51770).
- Cast iron's crystalline structure does not have the strength of homogeneous rolled steel pressure plates. Year ago, cast iron boilers were made two to three times thicker. On today's models, inspection reveals some have sections as thin as 5/32". Maybe they are not as durable as past reputation would have you believe.

If you need any further evidence of cast iron's inferiority, simply check the ASME codes. ASME doesn't allow cast iron boilers to be used on steam at pressures any greater than 15psi or 250°F water.



Cast Iron boilers tight passages and heat transfer pins are virtually impossible to clean, causing the system to become less efficient from day one.



System 2000's 1" wide circular flue design permits full access to passages for easy cleaning, brushing and visual inspection.

Cast Iron is an inefficient Material for heat transfer.

The casting process for cast iron boilers requires heavy sections which permit the molten metal to flow to the much thinner surfaces used for heat transfer. The large outer surfaces on cast iron boilers don't contribute to the heat transfer process, but do increase its weight and permit large surfaces for a high amount of heat loss.

Typically in a cast iron boiler, each time heat or hot water is required, nearly 450 pounds of cast iron and 6 to 15 gallons of water must be heated before the boiler can start heating the home.

Cast iron boilers lose Efficiency from day one.

The numerous tight passages and heat transfer pins in cast iron's sectional design make it virtually impossible to get a cleaning brush around and behind all the pins and hidden passages. Even when conscientiously cleaned, it is almost impossible to return the unit to its original efficiency.

To eliminate heat transfer pins, the industry introduced "3-Pass" cast iron boilers, but these are often heavier and require even more energy to heat.

Cast Iron boiler Warranty? Read the fine print.

The supposed "comprehensive" warranty cast iron boiler manufacturers offer rarely cover the whole assembly and they totally ignore the gaskets – the weakest link in the cast iron chain. This only causes friction between the customer and installer as to which gets stuck with repair and service bills that can be higher than the cost of completely replacing the boiler.

STEEL. The modern solution to today's heating needs.

Why are commercial boilers made of steel? Because steel is typically 50% stronger than cast iron. Its densely compacted uniform structure is more corrosion resistant than cast iron. Steel is ductile, flexible and easily welded into complex shapes. It heats up rapidly, expands and contracts easily and is highly resistant to temperature shock. It's simply a better material for hot water boilers.

The System 2000 Solution: Better Heating and Bigger Savings.

System 2000 by Energy Kinetics is the first steel boiler to successfully compete with cast iron boilers. It's specially formulated steel is uniformly thicker than the 5/32" thickness now found in many cast iron boilers. It's 50% thicker than the tubes found in most other steel boilers.

Yet System 2000 weighs only 160 pounds and contains just 2 ½ gallons of water. This means it can reach heating temperature must faster than cast iron. It's uni-body construction has *no* gaskets to leak. There are *no* sections. There is *no* tankless coil flange to leak.

System 2000's wide circular flue passage design permits full access for cleaning, brushing and visual inspection. And unlike cast iron designs, System 2000 keeps its original efficiency for years. System 2000s installed 35 years ago still operate at or near original efficiency. How long will they last? The answer is simple: *Over 35 years and still counting!*

If you believe that you deserve the most modern, efficient heating system, with proven longevity, think steel.

Then think System 2000.



System 2000 "Frontier" with front door opening is one of many models available.



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