



Are Superior Boilers Superior?

Superior Boiler Works makes Industrial grade boilers. Their robust construction philosophy comes, in part, out of decades of knowledge accumulated from doing repairs to all brands and types of boilers. Their design capitalizes on cost reducing short cuts they have repaired.

Firetube boilers may look similar but there are significant differences. For example, Superior Boilers normally weigh 25% more than others! This article shows some of the benefits of owning a Superior Boiler by examining various details of design and construction.

Shell:

Superior uses thicker steel than others. Added strength and longer life result.

Superior shells are larger in diameter than others. That means that tube spacing can be larger for added strength, longevity and reduction in stress.

Water Volume:

There can be up to 60% greater water volume in a Superior Boiler because of the larger shell. There is therefore up to 60% more BTU's stored in the water so steam pressure is stable when loads fluctuate. In water boilers, the higher "thermal mass" translates to a reduction in the chance for "thermal shock."

Turnaround:

Superior's turnaround volume is much greater than others. That makes inspection and maintenance far easier.

Furnace:

The joke goes that "the last thing some boiler manufacturers install is the rumble." From a former Superior Boiler representative who now sells and services another brand, "I miss Superior! They were so easy to fire compared to _____."

Superior furnaces are, on average, 21% larger than a normal boiler. The larger the furnace, the better the chance to have the burner run at its peak performance. There is less risk of having to make efficiency-robbing compromises in burner set up with Superior furnaces. There is less chance of rumbling pulsations as well.

The furnace volume that Superior publishes does not include the turnaround zone. Others do include it to give an appearance of quality.

A huge proportion of the heat transfer is through radiation so the larger the furnace is the less stress is transmitted and the higher the efficiency is.

Corrugated expansion joints are used in high temperature piping systems to absorb the system stress. Superior uses heavy-wall, corrugated material for their high pressure steam boiler furnaces. Others do not.

Tubes:

Wall thickness that is 10% greater than others use gives Superior more corrosion allowance and strength.

All tubes are degreased before installation. Boil out of new boilers is more efficient and easier. Clean tubes give a greater seal and performance.

Since the Superior shell is larger than others, there are fewer tubes required. That means less maintenance and higher tube velocity for increased efficiency.

Tubesheets:

Superior tubesheets are 40% thicker on average. Not only does that minimize the potential for cracking but it gives significantly added strength.

Each tube to tubesheet joint has much more material for better sealing.

The larger diameter allows for increased ligament distance too, so that stress is minimized.

Handholes:

Superior includes more of these than others do. Maintenance is easier and if re-tubing is ever needed, the effort is greatly minimized.

Insulation:

We don't use fiberglass like others! We do not partially insulate the boiler like some do either!

Superior used higher R-value, more dense mineral wool that covers the entire shell.

There is less heat loss and cooler boiler rooms because of this.

Burners:

Your choice, not what the manufacturer's dictate. No single source either.

Superior can supply burners ranging from the highest efficiency brand – Weishaupt, to any number of other burners.

Gordon Piatt, Powerflame, Webster, Industrial Combustion, Iron Fireman and others are available without hassle.