

Calloway

QUARTERLY

Materials Matter: Use **CAUTION** When Specifying Condensing Equipment

Condensing boilers have gained acceptance to a degree that many would not have imagined a decade ago. What was once considered a radical measure to achieve efficiency is hardly radical anymore. In fact, nearly every major boiler manufacturer has come out with a condensing product.

In the earlier days, two caveats were used to argue against the technology.

1. Boilers would not be able to withstand the corrosiveness of condensing flue gases.
2. Without appropriately low return water temperatures, the efficiency of condensing boilers would never be realized.

Over time, engineers have learned that systems must be designed for low return water temperatures to allow condensing boilers to operate as designed. If the design does not allow for such low entering boiler temperatures (below 130°F) then non-condensing boilers are more appropriate.

Interestingly, the first caveat is again at issue. No doubt because of the rising popularity of condensing boilers, many more condensing boilers have come on the market, with varying materials of construction. But while the abundance of equipment has changed, the corrosiveness of flue gases has not. As engineers go forward in designing more fuel efficient systems, it is imperative that they are vigilant about the materials of construction.

According to (2008) ASHRAE 31.4:

“For maximum reliability and durability over extended product life, condensing boilers should be constructed from corrosion-resistant materials through the fireside combustion chamber and heat exchanger. These materials include certain grades of stainless steel and aluminum....”

The Standard goes on to say:

“Cast iron, carbon steel, and copper are not suitable materials for the condensing section of the boiler..”

This is reason enough to carefully explore the materials of construction of any condensing boiler application. Any condensing boiler with these materials in the condensing section of the boiler should not be considered an equal to a boiler with aluminum or stainless steel combustion components. Incidentally, both the AERCO Modulex, which has cast aluminum components, and the Benchmark, which is stainless steel, meet the ASHRAE criteria.

This means reading a little bit more of the fine print, but it could mean the difference in several years of service life.



AERCO Esteem Condensing Boiler

AERCO Introduces Smaller Capacity Condensing Boiler

AERCO, the pioneer in condensing boiler technology, has recently introduced the new Low NOx Esteem 399 Hot Water Boiler. This lower capacity boiler, with its 439 Stainless Steel heat exchanger, brings long lasting condensing boiler efficiency to small to mid-sized facilities. Typically installed as a wall hung boiler, the Esteem is designed to achieve 95.1% efficiency. Easy to install and maintain, the Esteem is a less intimidating to maintenance personnel.

The Esteem has a heating capacity of 379,000 btus. However, multiple boilers may be “cascaded” together as demand increases. This makes it ideal for schools or other facilities where capacities may increase due to expansion.

The Esteem has a broad modulation span of 28% to 100%, so it closely matches the heating needs without short cycling or reducing efficiency. This same boiler has been marketed in Europe for many years and has a proven track record for reliable performance.

Remove Air, Dirt or BOTH

Calloway Engineered Systems is pleased to announce the availability of Wessel's air & dirt separators.

Wessels, founded in 1908, is a leading provider of certified ASME (American Society of Mechanical Engineers) and non-ASME pressure vessels to the HVAC market.



Wessels separators come in three different configurations:

WVA-Series Air & Dirt Separators which simultaneously remove dirt and air associated with hydronic system start-ups.

SPA Air Separators (with or without strainer) to remove air from the system water. These separators can be equipped with a strainer for the added benefit of capturing sediment.

In-Line Air Purgers to continuously separate and collect and vent entrained air.

Each of these units relies on time proven technology to minimize problems associated with excess air and debris in systems. Independent third party testing has show that the WVA Air & Dirt separator eliminates over 99.5% air. The same unit has been shown to remove 90% of dirt (in the 15 to 70 micron size) and more than 97% of particles in the 10 to 20% micron size within a 24 hour period.

For more information contact Caroline Calloway.

Scale-free Water Heaters? Imagine THAT!

How much more efficiently would your water heating equipment operate if it were free of scale and mineral deposits?

A regular in-house maintenance program using AERCO's **HydroSkrub** liquid descaler and the HydroForce pumping system would help assure peak performance of costly water heating equipment without burdening staff or the environment.

HydroSkrub is specifically designed to dissolve the toughest water scale, lime, mud, and rust deposits from any material found in water heating equipment. It is safe on virtually any material found in water-based equipment and best of all, it is completely non-hazardous to the skin. In fact, **HydroSkrub** is totally biodegradable and can be disposed of through normal plant sewers. It is also NSF/ANSI Standard 60 Listed.

To facilitate cleaning, AERCO also recently introduced the new **HydroForce** pumping system designed for use with

- **Non-toxic**
- **Non-injurious**
- **Non-flammable**
- **Non-hazardous**
- **Non-corrosive**



the **HydroSkrub** descaler. This lightweight, easy-to-use pumping system includes:

- 8 Gallon HDPE bucket
- Mesh hoses
- Tru-union valves
- Essential fittings
- Centrifugal pump

The pump is equipped with a magnetic drive and is capable of producing a flow rate of 4.5 gallons per minute.