Boiler Water Recommendations

Proper boiler operation requires appropriate water quality be maintained to prevent scale buildup on the heating elements and boiler chamber as well as preventing corrosion from acidic contaminants in the supply. Providing the proper water supply will help the unit delivery the highest efficiency possible, while decreasing the amount of downtime needed for inspections and cleaning.

Water treatment can vary based on based on steam pressure, application temperatures, and a variety of other operating conditions. Chromalox recommends supplying the unit with hot water at 140°F/60°C to minimize the heat-up time and conserve power. Colder water can be used but will result in a longer heater up time.

It is recommended to always use soft water with the following ASME general guidelines for water values and/or limits:

Total Hardness	0 - 0.3 parts per million as CaCO3
Iron	0.1 parts per million
Copper	0.05 parts per million
Silica	150 parts per million
Alkalinity	700 parts per million
Total Disolved Solids	2200 to 2800 parts per million
Conductivity	7000 Micro Ohm s/cm
Oxygen	0 - 0.007 parts per million
pH	8.5 to 10.0

The recommendations account for the most common factors but care must be taken to address any other elements that may be present in the local water supply. Generally, scaling is caused by hard minerals and suspended metal oxides such as those from iron and copper. Corrosion is typically attributed to the presence of dissolved oxygen, acids, or dissolved sour gasses. Foaming can result from the presence of suspended solids/oils and high alkalinity.

In addition, water conditions may vary throughout the year and it is recommended to periodically verify and adjust the treatment process. It is recommended to enlist a reliable and recognized water treatment company to review the specific site conditions, regularly perform water analysis, and provide for a specific water treatment program.

Once your water treatment equipment is installed and your boiler is operational, efforts must continue to ensure conditions stay within an acceptable range. Typically, water treatment companies will establish a plan that involves frequent, if not daily, testing and appropriate equipment adjustment to maintain optimal conditions. This monitoring along with regular blowdowns and inspections per your boilers installation and operation manual can dramatically improve performance and system longevity.

Example of a Maintenance Log:

Sample Date:	Record						
Recommended Substances	Supply	Feed	Condensate Return	Boiler Chamber 1	Boiler Chamber 2	Boiler Chamber 3	Any actions taken
Dissolved Oxygen							
Total Iron (ppm Fe)							
Total Copper (ppm Cu)							
Total Hardness (ppm CaCO3)							
Silica (ppm SiO2)							
Total Alkalinity (ppm CaCO3)							
Specific Conductance (µohms/cm)							

Tested By:

_____

Company:

_____

Initials: _____