

# 90% percent of all water problems in a commercial **steam cooker** are caused by **scale or corrosion.**

## Scale (Hard Water)

Calcium and Magnesium are the two minerals that form scale in steam cooker boilers and heating elements this results in a scale build up.

- 1) Scale build up in a steam cooker creates an environment where consistent and effective cooking becomes nearly impossible. Once scale builds up in the steam cooker a de-liming procedure is usually needed to try and dissolve the scale. The procedure is costly and requires harsh chemicals like muriatic acid to dissolve and clean the steam cooker.
- 2) As scale builds up in the steam cooker the steam cooker becomes less efficient at heating the water in the boiler and requires more energy consumption to generate the needed steam.



There are a number of failure modes that result from scale build up:

- Most steam generators use a mechanism (usually electronic probes) to sense water levels. These probes get coated with scale leading to over-fill and dry firing.
- Drain valves may clog from loose scale deposits.
- Gas and electric units may also suffer from accelerated stress, corrosion, & cracking from scale formation and other chemicals present that accelerate corrosion in boiler metals.

These factors result in:

- Frequent maintenance requirements leading to downtime.
- High service and repair costs
- Slower cook cycles.
- Uneven cook cycles resulting in poor food quality.
- Warranty issues as most manufacturers will not honor warranty agreements where the water does not meet stringent quality requirements.

## Corrosion

Corrosion is the degradation of a metal by its environment--it literally means to "gnaw away". Chlorine is the primary cause of corrosion in a steam cooker. Chlorine in a hot water environment can be very corrosive and will pit the boiler and elements. Chlorine can be controlled by adding a carbon based filter to eliminate most of the harmful effects of chlorine. The carbon in the filter literally absorbs the chlorine before the water enters into the steam cooker.