

CASE STUDY

FlexPro®

Closed Loop Corrosion Control Solution

Background

A northeastern institutional facility faced a host of issues with its closed loop cooling system. The makeup water for the 13,000 gallon ice builder was relatively corrosive due to low hardness waters. In addition, biocides could not be fed because of food and beverage restrictions. A nitrite-based treatment program was initially chosen for the ice builder. However, nitrifying bacteria rapidly consumed the corrosion inhibitor, and corrosion rates spiked as a result.

A pH-based treatment program was then selected, but failed to improve corrosion rates.

Analysis	Ice Builder Tank
Specimen Number	167927
Specimen Type	Mild Steel
Exposure Period (days)	122
Initial Weight (g)	8.1153
Final Weight (g)	8.1147
Weight Loss (g)	0.0006
Corrosion Rate (mpy)	<0.10

Solution

ChemTreat recommended its FlexPro®, a phosphorous and nitrogen-free product line, capable of delivering excellent corrosion rates and scale prevention. Because phosphorous and nitrogen are essential to bacterial growth, use of FlexPro® eliminated the need for biocide addition. FlexPro® was shot fed at 800 ppm and the system was held to a pH of 8.7.

Results

For months, FlexPro® maintained corrosion rates of less than 0.1 mpy for the mild steel heat exchangers. Bacterial counts remain below 1,000 CFU/mL, thus ensuring no biocide treatment is needed. The institution is very pleased with the low hazard chemicals, and has since adopted FlexPro® in multiple applications.

Results are examples only. They are not guaranteed. Actual results may vary.