



STANDARDS for CORROSION RATES

The following acceptable Corrosion Rates for Carbon Steel and Copper alloys in Open Recirculating Cooling Water Systems are listed in **Table 1**. Corrosion rates for Hot and Chilled Closed Loop Systems are listed in **Table 2**. The recommended time frame using coupons placed into a corrosion test rack is approximately 90 days, minimum. In an Open Cooling Water System 90 – 120 days exposure time is acceptable and in a Closed Loop System 90 – 365 days is expectable. Either systems must be in operation, with water flow at all times (no prolonged stagnant down time), in order for the corrosion rate study to be meaningful. Any corrosion rate in the Poor or Very Poor to Severe range should be investigated and adjustments made to the Water Treatment Program to correct, ASAP.

Table 1

Quantitative Classification of Corrosion Rates for Open Recirculating Cooling Water Systems

Corrosion Rates (mpy)

Description	Carbon Steel	Copper Alloys
Excellent	0.0 – 1.0	0.0 – 0.1
Mild or Very Good	1 - 3	0.1 – 0.25
Good	3 – 5	0.25 – 0.35
Moderate to Fair	5 – 8	0.35 – 0.5
Poor	8 – 10	0.5 – 1.0
Very Poor to Severe	> 10	> 1.0

Table 2

Quantitative Classification of Corrosion Rates for Hot/Chilled Closed Loop Water Systems

Corrosion Rates (mpy)

Description	Carbon Steel	Copper Alloys
Excellent	0.0 – 0.2	0.0 – 0.1
Mild or Very Good	0.2 – 0.5	0.1 – 0.25
Good	0.5 – 0.8	0.25 – 0.35
Moderate	0.8 – 1.0	0.35 – 0.5
Poor to Severe	>1.0	> 0.5