Water Quality

Evaporative cooling occurs with the evaporation of a small portion of water. The rising concentration of dissolved solids, means further airborne impurities and biological contaminants enter the recirculating water, as the evaporative cooler 'washes the air'.

Failure to control these impurities and contaminants will see them cause scaling, corrosion, sludge or biological fouling. For optimal heat transfer efficiency, maximum service life and minimized operating costs, the quality of the make-up and recirculating water must be ensured. You can find the water quality guidelines for all BAC material options in the paragraph "Water quality" of BAC's application guidelines.

Good water care is also vital for avoiding harmful bacterial proliferation, including legionella, in the recirculating water. BAC offers automatic water treatment packages or filtration systems to control corrosion, scaling, fouling and microbiological growth.

Circulated water quality guidelines

Baltiplus Protection	
pH	6.5 to 9.0
pH during initial passivation	below 8.2
Total hardness (as $CaCO_3$)	50 to 600 mg/l
Total alkalinity (as $CaCO_3$)	500 mg/l max.
Total dissolved solids	1500 mg/l max.
Conductivity	2400 µS/cm
Chlorides	250 mg/l max.
Sulfates*	250 mg/l max.*
Total suspendid solids	25 mg/l max.
Chlorination (as free chlorine/halogen): continuous	1 mg/l max.
Chlorination (as free chlorine/halogen): batch dosing for cleaning & disinfection	5-15 mg/l max. for 6 hours max. 25 mg/l max. for 2 hours max. 50 mg/l max. for 1 hour max.

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Baltibond and SST 304L	
pH	6.5 to 9.2
pH during initial passivation	below 8.2 (for units with HDG coil only)
Total hardness (as $CaCO_3$)	50 to 750 mg/l
Total alkalinity (as $CaCO_3$)	600 mg/l max.
Total dissolved solids	2050 mg/l max.
Conductivity	3300 µS/cm
Chlorides	300 mg/l max.
Sulfates*	350 mg/l max.*
Total suspendid solids	25 mg/l max.
Chlorination (as free chlorine/halogen): continuous	1.5 mg/l max.
Chlorination (as free chlorine/halogen): batch dosing for cleaning & disinfection	5-15 mg/l max. for 6 hours max. 25 mg/l max. for 2 hours max. 50 mg/l max. for 1 hour max.

	SST 304L and SST 316L with HDG coil	SST 316L (with SST 316L coil)
pH	6.5 to 9.2	6.5 to 9.5
pH during initial passivation	below 8.2 (for units with HDG coil only)	not applicable
Total hardness (as $CaCO_3$)	50 to 750 mg/l	0 to 750 mg/l
Total alkalinity (as $CaCO_3$)	600 mg/l max.	600 mg/l max.
Total dissolved solids	2050 mg/l max.	2500 mg/l max.
Conductivity	3300 µS/cm	4000 µS/cm
Chlorides	300 mg/l max.	750 mg/l max.
Sulfates*	350 mg/l max.	750 mg/l max.*
Total suspendid solids	25 mg/l max.	25 mg/l max.
Chlorination (as free chlorine/halogen): continuous	1.5 mg/l max.	2 mg/l max.
Chlorination (as free chlorine/halogen): batch dosing for cleaning & disinfection	5-15 mg/l max. for 6 hours max. 25 mg/l max. for 2 hours max. 50 mg/l max. for 1 hour max.	5-15 mg/l max. for 6 hours max. 25 mg/l max. for 2 hours max. 50 mg/l max. for 1 hour max.

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** Higher concentrations of sulfates allowed provided the sum of chlorides +sulfates paramaters does not exceed 500 mg/l for Baltiplus, 650 mg/l for Baltibond/SST 304 and 1500 mg/l for SST 316/Pultruded.*
Note: For Ozone water treatment applications, stainless Steel 316 execution is required. Ozone levels are to be maintained to 0.2 ppm +/- 0.1 ppm for at least 90% of the time, with absolute maximum peaks of 0.5 ppm.

Latest information on http://www.baltimoreaircoil.eu/knowledge-center/water-quality