



CASE STUDY:

CocoWalk Lifestyle Center



EasyWater CTF System:
Model CTF-100 Installation at CocoWalk

COOLING TOWER & CLOSED LOOP WATER TREATMENT

Project:	CocoWalk Lifestyle Center
Location:	Coconut Grove, FL
Scope of Work:	<ul style="list-style-type: none"> ▶ 2-Cell, 720 Ton Cooling Tower System ▶ Less Than 4000 Gallon Closed Loop
EasyWater Equipment:	<ul style="list-style-type: none"> ▶ CTF - Cooling Tower Treatment (Model CTF-100) ▶ Series C - Closed Loop Treatment (Model CLC-1000)

≈ PROBLEM

CocoWalk is an upscale lifestyle center located in the Coconut Grove neighborhood of Miami, Florida. This large complex has 30+ stores and services, including shops, restaurants and a movie theater.

This facility has a cooling tower system and plate and frame heat exchangers providing water for a heat pump system. The equipment provides air conditioning for all tenants. Like many cooling towers, CocoWalk was plagued with ongoing problems from:



2 Cell Cooling Tower at CocoWalk

- ▶ Hard water scaling in there piping system and heat pumps
- ▶ High bacteria counts
- ▶ Hard water scaling in the cooling tower fill

Cooling Tower Treatment Results After 8 Months

Control of Scale Deposits:
Eliminated

Bacteria Dip Slide Results:
10⁰

Closed Loop Treatment Results After 8 Months

Dissolved Oxygen Content:
<1 ppm

Corrosion Coupon Test Results:
.0692 MILS/YR

≈ SOLUTION

CocoWalk purchased (1) EasyWater CTF-100 Treatment System for the cooling tower and (1) EasyWater CLC-1000 to treat the closed loop heat pump system.



EasyWater SedimentShield Filtration for CTF-100

EasyWater's CTF System is a unique, three-part solution for treating cooling towers:

- ▶ EasyWater SedimentShield—a sub-micron, backwashing filter for the removal of sediment and bacteria
- ▶ Ultraviolet chamber for bacterial sanitization
- ▶ EasyWater No-Salt Conditioners to prevent and remove hard water scale deposits, biofilm, and bacteria. Our No-Salt Conditioners have the added benefit of preventing the hot UV lamps from scaling.



Ultraviolet (UV) for CTF-100



EasyWater No-Salt Conditioners for CTF-100



EasyWater Series C System:
Model CLC-1000 Installation at CocoWalk

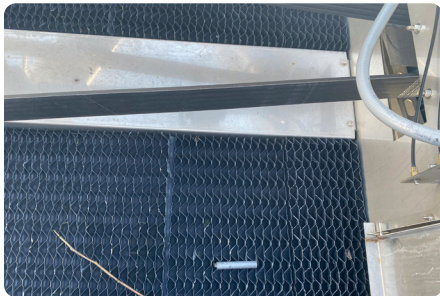
EasyWater's Series C System is an advanced closed loop treatment system that eliminates the need for chemical treatment:

- ▶ Proprietary filtration media that continuously removes dissolved oxygen
- ▶ Sub-micron, self-backwashing filter for the removal of sediment, debris, and bacteria
- ▶ EasyWater No-Salt Conditioners to prevent and remove high iron content and hard water deposits.

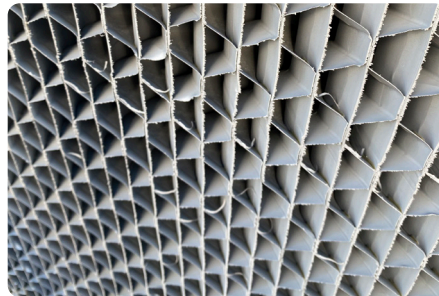
≈ RESULTS: COOLING TOWER WITH CTF SYSTEM

Our CTF Treatment System has continuously maintained low bacteria count, clear water, and no scale. A small amount of oxidizing biocide is used and properly maintained as a precautionary measure for Legionella.

CocoWalk is now seeing an impressive 80+% reduction in chemical use. There has also been significant savings in energy consumption through eliminating limescale build-up. In addition to these savings, CocoWalk no longer has to deal with the hazard of having multiple types of chemicals on site to treat their cooling towers.



Top of cooling tower with no scale after (1) year



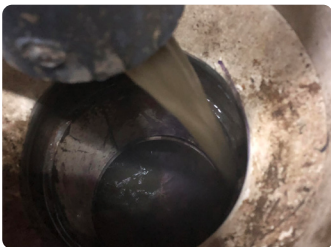
Side of cooling tower with no scale after (1) year



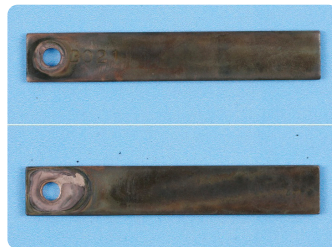
Bacteria dip slides continue to register 10⁰ on a monthly basis.

≈ RESULTS: CLOSED LOOP WITH SERIES C SYSTEM

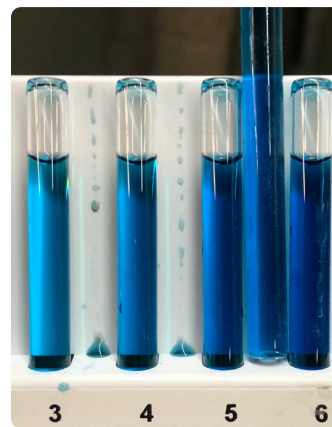
The Series C Closed Loop Treatment System has continuously maintained low dissolved oxygen and corrosion rates in the system while removing dirt debris, and deposits that were in the system.



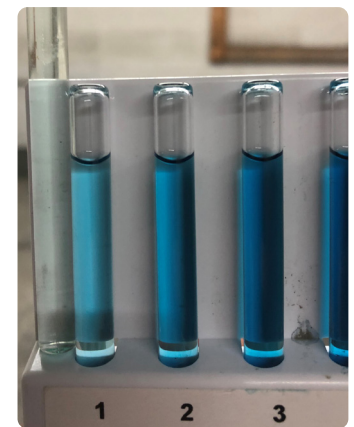
Dirt and debris being removed during backwashing



Latest corrosion coupons lost only .1155 mils/yr for steel and .0371 for copper which is beyond EXCELLENT according to the chart on the next page!



Before - Dissolved oxygen test results 5-6ppm



After 8 Months - Dissolved oxygen maintained at <1ppm

RESULTS CONTINUED ON NEXT PAGE →

≈ RESULTS: CLOSED LOOP WITH SERIES C SYSTEM (CONT'D)

During the latest (10) month period the closed loop had steel corrosion rates of and .1155 mils per year and a copper corrosion rate of .0371.

Date: 6/8/2022
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Metal Samples, Co., Inc.
 Phone: (256) 358-4202
Corrosion Analysis Data Report

Customer	: EASYWATER	Shop Order	: 218204
Purchase Order:	MAIL/JASON		

Alloy	: C1010	ID Number	: BW4594
Initial Weight	: 11.0322	Installed	: 7/15/2021
Final Weight	: 10.9908	Removed	: 5/12/2022
Weight Loss	: 0.0414	Hours Exposed	: 7224
Density (g/cm3)	: 7.8700	Surface Area (in2)	: 3.3691

Mils Per Year	: 0.1155
Comments	: NO VISIBLE ETCHING.PRE-CLEAN=11.0138
Location	: COCOWALK PUMP ROOM/CHILLED WATER

Alloy	: CDA110	ID Number	: DB8397
Initial Weight	: 12.3579	Installed	: 7/15/2021
Final Weight	: 12.3429	Removed	: 5/12/2022
Weight Loss	: 0.0150	Hours Exposed	: 7224
Density (g/cm3)	: 8.8900	Surface Area (in2)	: 3.3691

Mils Per Year	: 0.0371
Comments	: NO VISIBLE ETCHING.PRE-CLEAN=12.3598
Location	: COCOWALK PUMP ROOM/CHILLED WATER

Based on the chart to the right, the Series C System at CocoWalk provided results that were well below the 0.1 limit for having an **EXCELLENT** corrosion rate!

This test confirms that Series C provides superior corrosion control without using chemicals.

Classification of Corrosion Rates for Closed Recirculating Cooling Water Systems
(Corrosion Rates, mpy)

Description	Carbon Steel	Copper Alloys
Excellent	Less than or equal to 0.2	Less than or equal to 0.1
Good	0.2 to 0.5	0.1 to 0.25
Moderate	0.5 to 0.8	0.25 to 0.35
Poor	0.8 to 1	0.35 to 0.5
Very Poor to Severe	Greater than or equal to 1	Greater than or equal to 0.5

Source: Bennett P. Boffardi, Ph.D., FNACE. "Standards for Corrosion Rates", AWT Analyst, Spring 2000