

Weighing In on Counterflow Film Fill

Fouling, as defined for cooling tower fill media, is the process of deposition of foreign matter, including biogrowth, on the heat exchange surface – in this case the plastic film water flow area. In many water chemistries and treatment systems, this process is controlled to the extent that it does not measurably inhibit the cooling process or allow excessive weight to build up in the cooling tower.

This fouling process can, if left unchecked, reverse performance and add substantially to cooling tower structural loading.

On-site fill testing in your cooling tower can provide the status of your current situation and provide insight to determine what steps need to be taken before fill or structural problems become a serious issue.

Why On-Site Fill Testing?

- Avoid emergency shutdown due to loss of thermal capacity.
- Avoid catastrophic fill collapse due to excessive weight.
- Customer budgeting (i.e. scheduled capital expense) for future fill replacement.

How Does Fill Weighing Work?

- SPX | Marley has a proprietary weigh-rack design used at the customers site for reliable fill sample testing. Years of experience have resulted in testing specifications to determine the status and to interpret the results in terms of performance and life cycle.
- We have the knowledge from years of field testing to determine how and when to test...(i.e. the weighing must be completed within 24 hours or else the results will be worthless).



Biofouling of Counterflow Film Fill



Structural Collapse Caused By Biofouling

Service Solutions

- There are two levels of service available.
 - Field testing/analysis on a one-time basis
 - Longer term fill testing “program” where a customer would have weigh racks on-site, for long-term tracking of fill condition. We can then develop performance curves showing actual and predictive weights.
- Pilot-scale studies have produced standards for which to compare the real-world measurements (i.e. translation of test results of small samples to reflect the conditions of the entire tower)

Strategies to Prevent Biological Growth

- In order to continuously and effectively operate a cooling system and establish sound biological control, first eliminate nutrient sources that may add material to the system, such as oil leaks, process fluid leaks and the like.
- It is critical to provide a consistent and effective biocide addition to the system. In most cases this is a chlorine or bromine.
- In a conventional chemical treatment system, a service provider or self-administered water maintenance program consists of adding an oxidizing biocide and a combination scale and corrosion inhibitor to the water system. One should monitor chemical treatment to determine the effectiveness of the program. This will prevent major operating problems in the system.

A Total Solution

Every Stage, Every Condition, Every Need

Aging towers, increasing demands, tightening budgets, forced prioritization...we understand the challenges you face and just how important it is to do more with what you have.

With SPX | Marley longevity strategies, you get more than a simple maintenance contractor—you get access to a team of experts with a thorough understanding of virtually every tower in operation. After all, Marley has been a leading name in cooling towers for more than 90 years.

When you call on Marley, you can rest assured your towers will be assessed, maintained, and repaired by the industry leader. And when you need any cooling tower solution—design, construction, installation, service, parts, warranty, consultation or custom options—your search can begin and end with SPX | Marley.

SPX COOLING TECHNOLOGIES, INC.

7401 WEST 129 STREET
 OVERLAND PARK, KS 66213 USA
 913 664 7400 | spxcooling@spx.com
spxcooling.com

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