Delta Cooling Towers, Inc.
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What is Anti-Microbial?

The word antimicrobial was derived from the Greek words anti (against), micros (little) and bios (life) and refers to all agents that act against microbial organisms.

What is Legionnaire's Disease?

Legionnaires' disease is a severe form of pneumonia — lung inflammation usually caused by infection. Legionnaires' disease is caused by a bacterium known as legionella. Each year an estimated 10,000 to 18,000 people are infected with Legionella bacteria in the United States.

When Was Legionnaires Disease First Recognized?

Legionnaires' disease acquired its name in 1976 after an outbreak of pneumonia occurred among people attending a convention of the American Legion in Philadelphia. Later, the bacterium causing the illness was named Legionella pneumophila.

Where is Legionnaires Disease Found?

Legionnaires Disease exists naturally in water and moist soil. It has been found in creeks, ponds, hot and cold water taps, hot water tanks, water in air conditioning cooling towers, evaporative condensers, and soil at excavation sites.

What are the Symptoms of Legionnaire's Disease?

Legionnaires' disease is very similar to other types of pneumonia (lung infection), with symptoms that include: Cough, Shortness of breath, Fever, Muscle aches, Headaches. Legionnaires' disease can also be associated with other symptoms such as diarrhea, nausea, and confusion. Symptoms usually begin 2 to 10 days after being exposed to the bacteria, but it can take longer so people should watch for symptoms for about 2 weeks after exposure.

Is Legionnaires Disease Treatable?

While most cases are successfully treated with antibiotics, patients often still require hospitalization. The disease can be fatal, and some people are more likely to become seriously ill after contracting it. This includes people over age 50, smokers, people with a chronic lung disease such as COPD, and people with a weakened immune system.

How Can You Get Legionnaires Disease?

Legionnaires Disease is contracted by breathing in mist, steam, or vapor that has been contaminated with the bacteria. "One example might be from breathing in steam from a shower that has not been properly cleaned and disinfected.

Is Legionnaires Disease Preventable?

The most effective way to prevent the infection is to make sure that water systems like cooling towers, spas, and pools are properly maintained and up to current health and safety codes.

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How Does the New Anti-Microbial Delta AM® Cooling Tower Help to Prevent Legionnaires Disease?

- Our tower shell is made of an anti-microbial HDPE Resin which resists growth of biofilm and microorganisms
- Biofilm growth and microorganisms allow a place to hide Legionella from chemical treatments and provide nutrients for Legionella growth
- Our materials of construction withstand the most aggressive chemical treatments used to combat Legionella from other sources entering the tower
- Our tower fill/wet decking has Accu-Shield which inhibits the growth of microorganisms and biofilms
- Our basin design limits sunlight and low turbulence areas which assists in preventing the growth of bacteria

How Does Our Anti-Microbial Resin Work to Destroy Bacteria on a Cellular Level?
The critical attack site of a cell wall is the peptidoglycan layer. This layer is essential for the survival of bacteria; loss or damage of this layer destroys the rigidity of the bacterial cell wall, resulting in death.

Test Methods:
The Standard JIS Z 2801, Test for antimicrobial activity and efficacy. The materials were in the form of 2" x 2" flat test samples. The testing process requires that the samples be sterilized, inoculated with a controlled amount of each bacterium, incubated at 35°C for 24 hours, and finally washed and tested for viable bacteria.

Calculation of Antimicrobial Activity (R):
R = (Log (Bacterial Count of Untreated Control after 24 Hour Incubation))-(Log(Bacterial Count of Test Piece after 24 Hour Incubation))

Criteria for Judging Antimicrobial Activity (R):
When the sample displays an R value of 2.0 or greater it is judged to have anti-microbial efficacy.

Test Results from Cooling Tower Materials?
The bacteria tested were Legionella Pneumophila Serogroup 1. The base materials tested were Delta Compounded HDPE, FRP, and Stainless Steel. **The Delta AM® Tower material was the only material deemed Anti-Microbial**

Who Did the Testing?
Special Pathogens Laboratory, The Legionella Experts®, in Pittsburgh, PA., provides expertise in the detection, control, and remediation of Legionella and other waterborne pathogens. Led by Drs. Janet E. Stout and Victor L. Yu, world-renowned pioneers and experts in Legionnaires' disease prevention. They provide total Legionella control, an integrated platform of solutions to prevent outbreaks, save lives, and endeavor to end Legionnaires' disease.

Do I Have to Treat the Cooling Tower Water with Chemicals?
Yes, it is critically important to maintain a professionally treated water program for the cooling tower water. Delta's AM® Towers are designed to withstand even the harshest chemicals, unlike steel tower that can prematurely fail from a negative reaction to biocides and acid feed.

Have Any Properties Changed from The Original Tower to The New Anti-Microbial Tower?
No, nothing has changed. Benefits like lower weight, complete UV protection, structural strength, non-corroding, and seamless designs, remain the same.