

Is MIC corrosion destroying your Fire Sprinkler System Implementing Corrosion Protection



Liberty Corrosion Solutions recognizes the wide spread destructive influence of MIC bacteria. Our MIC test assists in identifying potential problem areas. All systems should however be assumed to have the possibility of leaks and or failure from MIC corrosion. Often the corrosion from MIC is irreversible and may permanently alter the hydraulics calculations of the fire sprinkler system.

What Is MIC?

Microbiologically Influenced Corrosion (MIC) is a commonly occurring bacterial growth found in new and existing fire sprinkler systems. Fire sprinkler systems offer an ideal environment for MIC bacterial development. The presence of water, iron, minerals, closed systems, and nutrient rich water as well as pressurized air allow for optimal microbial growth conditions. The average system affected by MIC Corrosion will begin to leak within 10 years. Some systems have shown serious signs of corrosion after only two years. Replacing pipe without treatments is simply adding a food source to the existing bacterial colonization and accelerating leaks. MIC grows as the sprinkler pipes naturally begin to rust eventually leaking in concentrated areas. Optimal temperatures for growth range from 50 degree F – 140 degree F. The bacteria seek out low points to establish colonization. Unlike generalized corrosion that affects all areas, MIC attaches to a specific area and begins a localized corrosive attack. The microbes are attracted to low lying areas and migrate to any irregularities in the piping. As they begin to develop they produce gelatinous slimes and sticky polymers that attract organic and inorganic materials.

The accumulation of materials form rounded shaped nodules referred to as tubercles. The formation of tubercles allow for a reduced oxygen level as little as 50 parts per billion [ppb] within the outer layer. This in turn produces an environment in which anaerobic bacteria thrive. The bacterium cause an aggressively corrosive environment which chemically attack the fire sprinkler system. The byproducts of the microbes lower the pH to acidic levels leading to further destruction of the pipe wall. The production of sulfuric acid is a byproduct of sulfate reducing bacteria commonly found with MIC. Left unchecked, this corrosion often results in complete pipe degradation potentially rendering the system inoperable.

Numerous metals have been shown to be adversely affected by MIC. Iron, steel, stainless steel, aluminum, zinc and copper alloys are all affected by MIC to varying degrees in Aerobic and Anaerobic atmospheres. Studies have also shown that electroplated pipe may accelerate the MIC activity as MIC can set up a reverse galvanic process.

MIC leads to a variety of conditions that may result in permanently damaging a sprinkler system. Problems such as loss of flow, fouled sprinkler heads, tubercle build up, and loss of pipe leading to pinhole leaks are common and may lead to property and life loss.

Liberty Corrosion Solutions offers numerous options for the treatment and prevention of MIC.

Free Presentation: Recognizing the Symptoms of Pipe Corrosion

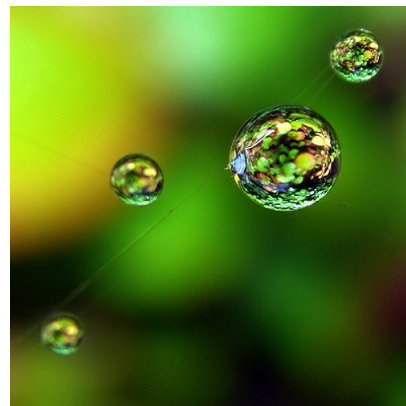


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30 min Presentation

- Identify high risk properties.
- The cost of waiting.
- Recognizing the signs of MIC.
- Avoiding the 5 most common mistakes.
- Simple solutions.

MIC Microbiologically Influenced Corrosion (MIC) is an aggressive corrosive action caused by bacteria. MIC can result in system failure in as little as 5 years. Many systems are lost every year to the destructive forces of MIC. Avoid making the costly mistake of allowing corrosion to continue to damage your property.



Benefit of Testing and Cleaning Fire Sprinkler Water

Clean water is key to our success in corrosion control. Often overlooked is the importance of establishing a bacterial free atmosphere before charging the fire sprinkler system. Included in all of our treatment programs is the crucial step of properly cleaning the system followed by

water testing and monitoring. Testing allows for quick identification of problem systems and the potential for leaks.

Feel free to contact us regarding corrosion solutions or testing options.

Sincerely,

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Loss of Water flow, a serious Risk to life and property