

Microbe Induced Corrosion (MIC)

What is It and How Do You Prevent It?

The Problem: Microbe Induced Corrosion (also sometimes call Microbial Corrosion or Microbiologically Induced Corrosion) is a phenomena that causes accelerated corrosion and attack to piping, duct, and materials of construction such as: Concrete, cast and ductile iron, carbon steel, galvanized steel, and even the stainless steel alloys.

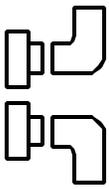
People often picture a mutant strain of microbes chopping away - eating holes in the susceptible materials. Fortunately it is nothing that frightening. In actuality, it is the waste materials from the life cycle of the microbes that are causing the corrosive attack. A crude analogy would be what happens to the finish on your car if you do not wipe off the bird "poop".

Microbial waste products can act as a synergist or accelerator for other corrosion environments that are already occurring. The microbes flourish in service environments that are already corrosive - either due to high chloride environments (such as brine, seawater, brackish water, etc.); or in those environments where hydrogen sulfide attack is occurring (such as sewers and waste treatment plants.) This is why MIC is often discovered in stainless steel, ductile iron, and concrete pipe.

The Expensive Solution: In an effort to reduce microbe induced corrosion the producers of stainless and carbon steel pipe and duct have introduced colloidal silver based bacteriostatic agents that are embedded in the surface of the base material. The "theory" being that a continuing release of the silver ions will suppress the destructive bacterial growth; and thereby protect the piping or duct from degradation and destruction.

This solution might be feasible if you have an unlimited budget, and if you want to be a pioneer. But, have you checked the markets recently for the price of silver. And, some environmental groups have expressed concerns about the continued silver ions leaching out. Also, the "silver bullet" solution does nothing to solve the basic underlying attack from the high chloride and hydrogen sulfide service environments.

The Better and More Cost Effective Solution: Select and use FRP composite materials! For applications such as brine, saltwater, seawater, sewers, and waste treatment equipment; properly specified composites, manufactured by a knowledgeable fabricator; are without question the best and most economical corrosion resistant material of construction.



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Microbes Versus FRP Composites

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A search of case histories from the resin companies, going back decades, finds no documented situations where MIC has occurred with properly fabricated FRP composites. It appears that FRP composites are not attacked by the waste products of the current strains of microbes.

The Best and Lowest Cost Per Year of Service Life Solution: If you want complete "peace of mind", we recommend you use our Series 5900-MIC composites for pipe and duct; and our Series 11900-MIC composites for other equipment and applications. These series use a special proprietary chemical compound that is reacted into the polymer to provide unique antimicrobial capabilities.

The special polymer formulation used in the Series 5900-MIC and 11900-MIC composites was developed by a polymer scientist. This extraordinary eco-friendly composite material not only provides enhanced antimicrobial properties - but, also inherent resistance against barnacles and all types of mussels.

If you want the "belt and suspenders" protection against both current strains of Microbe Induced Corrosion; as well as the ability to handle the unknowns from possible mutations of future microbes; we have your solution!

The Guarantee: We are so confident that our MIC laminates will provide you your "best buy", that we offer a 3 year unconditional warranty against Microbe Induced Corrosion. And, an extended warranty of up to 25 years is available upon application and quotation.

It is Innovation That Sets Us Apart!