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Corrosion: Serious Business

Technical Article CWT-___

Corrosion is a natural process that converts refined metal to its more stable oxide (also described as the gradual destruction of metals by a chemical reaction in its environment). Corrosion typically refers to electrochemical oxidation of metal with an oxidant such as oxygen. The formation of iron oxides or what most know as the rusting process is an example of electrochemical corrosion. Many structural alloys corrode merely from exposure to moisture in the air. The process can be affected by exposure to certain substances. It can be in the form of a localized pit or crack, or it can extend across a more uniform area of a metal surface.

Types of Corrosion Typically Associated with Water Systems

Generalized. Generalized corrosion is uniform corrosion over the entire metal surface.

Pitting. Pitting corrosion is a term that describes localized pits or indentations caused by corrosion on metal. Pits and indentations can vary considerably in size and depth.

Localized. Localized corrosion is usually the result of under-deposit corrosion, typically characterized by an intense attack of an isolated area on the metal surface.

Copper Plating. Copper plating corrosion is deposition of soluble copper plating out on mild steel or other non-copper alloys.

Under-deposit. Under-deposit corrosion is an aggressive attack of the metal that occurs under a layer of contaminants on the metal.

Galvanic. Galvanic corrosion is usually the result of two dissimilar metals attacking one another. Corrosion is accelerated more greatly on the less noble metal.

Erosion. Erosion corrosion is the accelerated deterioration or attack on the metal that is typically related to excessive or improper flow and/or fouled systems.

In a water treatment program, the recommended way to monitor and detect corrosion rates in a system is by utilizing corrosion coupons. For more information, check out our Tech Bulletin on Corrosion Coupons.