

# THE WATER AND WASTEWATER INDUSTRY AND THE EFFECTS OF CORROSION

## CORROSION

Wastewater treatment plants process and handle some of the most corrosive solids and liquids throughout process engineering, often causing damage after prolonged operation to pipes, tanks, pumps, **and electrical conduit systems**. A wastewater treatment plant is a complex, sophisticated system with a high level of standards for the entire plant, including technical installations. The materials needed to construct a WWTP must be able to withstand the wide range of corrosive conditions.



## HOW BIG?

According to the **American Waterworks Association (AWWA)** industry database, there are approximately

**876,000** miles  
of municipal water piping in the United States

The sewer system consists of

**16,400**

publicly owned treatment facilities that release

**41 billion gallons**

of wastewater per day

## WHAT CAUSES CORROSION

- › **CRACKS** in the wastewater treatment tanks
- › **LEAKS** from the storage tanks
- › **LEACHING** of contaminants from sludge in on-site storage areas



**Hydrogen sulfide, methane, ammonia, oxygen, carbon dioxide, and nitrogen** are found dissolved in wastewater, with anaerobic decomposition of such gases producing other odorous compounds, amines, and fatty acids that lead to unforeseen corrosion threats.

### WASTEWATER ALSO CONTAINS HARMFUL METAL IONS

COPPER	LEAD	MERCURY	NICKEL
<b>Cu</b> Copper 63.546	<b>Pb</b> Lead 207.2	<b>Hg</b> Mercury 200.592	<b>Ni</b> Nickel 58.6934

The presence of these harmful ions can **cause further corrosion** through a process known as **"galvanic coupling,"** where noble metals such as carbon steel, stainless steel, or copper reacting with metal ions causes corrosion.

## CALBOND PVC COATED CONDUIT SYSTEMS *WE'VE GOT YOU COVERED!*

- › **Calbond PVC Coated Conduit** comes standard with a 40 mil PVC coating on the exterior of the conduit and a 2 mil urethane coating on the interior of the conduit and on the threads.
- › **Calbond PVC Coated Conduit** is UL Listed and NEMA RN 1 compliant, with no exceptions, and is UL6 listed with both the zinc coating and PVC coating as primary protection against corrosion.
- › The ease of installation and the unit cost of materials makes **Calbond PVC Coated Conduit** an obvious choice for the budget-conscious contractor. PVC coated conduit is a lower cost alternative to stainless steel in many cases.



## EASY TO DO BUSINESS WITH

- ✓ **Rapid quotation response time**
- ✓ **Timely shipments**
- ✓ **Dedicated staff committed to earning your business**
- ✓ **Competitive prices**

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