



# Perma-Shield System

CONTINUOUS CORROSION PROTECTION FOR WASTEWATER FACILITIES.



## BENEFITS

- H<sub>2</sub>S permeation resistant
- Sulfuric acid resistant
- Abrasion resistant
- Increased film thickness
- Sewage resistant
- Rapid return to service
- 100% solids
- Trowel or spray application options
- Chemical resistant

For shielding wastewater facilities against corrosion, Tnemec's Series 434 Perma-Shield H<sub>2</sub>S™, Series 435 Perma-Glaze™ and Series 436 Perma-Shield FR™ offer the best protection in the industry. Tnemec sought to specifically design these fluid-applied coatings to match PVC liners' ability to resist the threat of hydrogen sulfide (H<sub>2</sub>S) gas permeation, without the seams and hassles. And as the leader in the wastewater industry for more than 50 years, Tnemec did just that. These products not only offer your facility ultimate protection against corrosion, they also extend its life and protect your investment, too.

### The Products

Designed to resist the biological and chemical components typically found in wastewater streams, Series 434 Perma-Shield H<sub>2</sub>S, Series 435 Perma-Glaze and Series 436 Perma-Shield FR – all 100% solids hybrid epoxies – are derived from the same modern coatings technology and resin, but offer more options for protecting your facility. These products are ideal for: grit chambers, wet wells, lift stations, concrete pipes, aeration basins, launderers, digestors, headworks, clarifiers and other areas prone to sulfide corrosion.

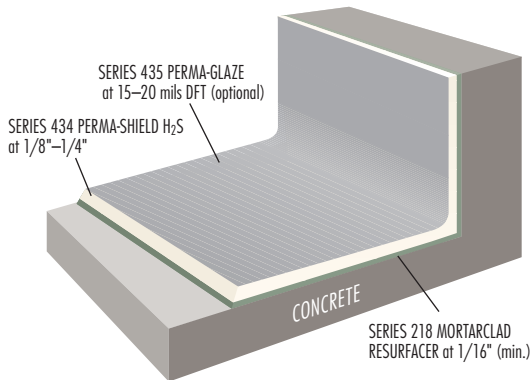
**Series 434 Perma-Shield H<sub>2</sub>S** is an aggregate-reinforced mortar designed to reduce permeability and provide an impenetrable system to H<sub>2</sub>S gas. Since it is specifically formulated to withstand harsh wastewater environments, its resistance to abrasion, corrosion and impact allows facilities to not only last longer but perform better and avoid costly downtime as well. Series 434 is especially useful on rehab projects where substantial substrate loss has occurred.

**Series 435 Perma-Glaze** is a spray-applied epoxy coating that can be used alone as a high-build protective liner, a thin-film coating or as the chemical- and permeation-resistant glaze coat over Series 434 Perma-Shield H<sub>2</sub>S or Series 436 Perma-Shield FR.

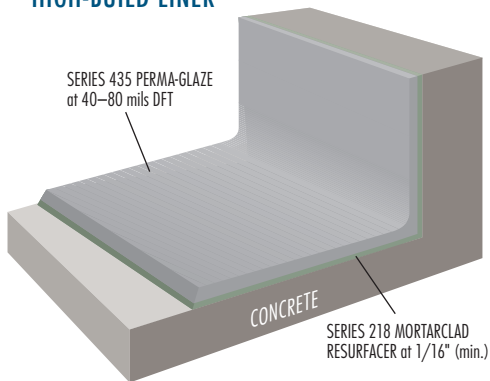
**Series 436 Perma-Shield FR** is a spray-applied liner with fiberglass reinforcement, which allows for higher film build. It's ideal for protection against corrosion in new construction and concrete rehabilitation projects. The reinforcing fiberglass also dissipates curing and impact stresses that typically develop in high-build liners, leading to better film integrity and a longer service life.

# VERSATILITY OF PERMA-SHIELD SYSTEM

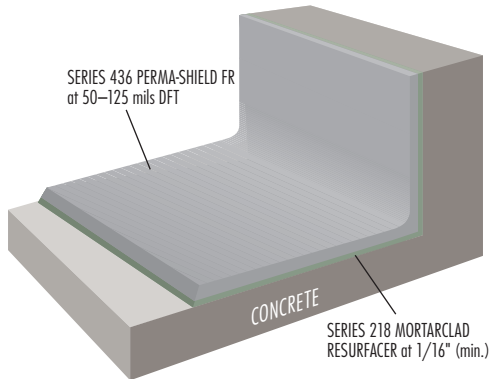
## MORTAR AND OPTIONAL GLAZE COAT



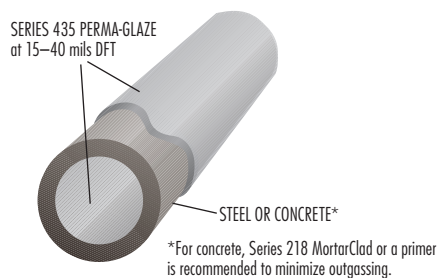
## HIGH-BUILD LINER



## FIBER-REINFORCED HIGH-BUILD LINER

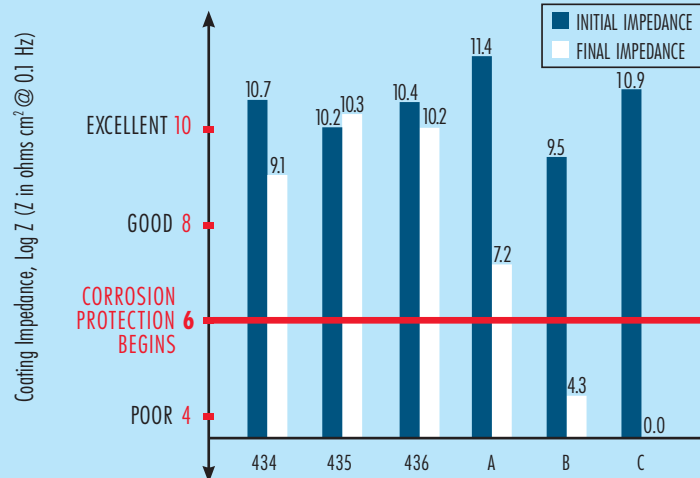


## THIN-FILM COATING



A component of the S.W.A.T. test, Electrochemical Impedance Spectroscopy (EIS) is a method that uses electrical current to determine the level of coating degradation after exposure to a testing environment. Measuring a coating's resistance as impedance to an electrical current before, during and after provides a correlation to its overall performance. The higher the resistance, the lower its permeability to gases, liquids, chlorides and ions, thus the more protection it offers. As shown below, the final impedance of the Perma-Shield products surpassed the competition,\* proving them to be the ultimate protection for wastewater facilities.

## EIS IMPEDANCE OF CYCLIC IMMERSION TEST COATINGS



For complete testing results, contact your local Tnemec representative.

\* A: thick film amine cured epoxy  
 B: multi-purpose industrial epoxy  
 C: coal tar epoxy

## The Test

In order to evaluate coating performance, Series 434 Perma-Shield H<sub>2</sub>S, Series 435 Perma-Glaze and Series 436 Perma-Shield FR all underwent the Severe Wastewater Analysis Test (S.W.A.T.). This accelerated wastewater corrosion testing program was developed by Tnemec, in conjunction with leading engineers, municipalities and testing laboratories to test a coating's resistance to H<sub>2</sub>S permeation, which is the leading cause of coating failure within wastewater facilities. Out of the hundreds of coatings tested, Series 434 Perma-Shield H<sub>2</sub>S, Series 435 Perma-Glaze and Series 436 Perma-Shield FR tested excellent for permeation resistance, adhesion and visual inspection, making them the best long-term wastewater protection – and the only protection on which you can rely for your own facility's needs.

VISIT TNE MEC AT [WWW.TNE MEC.COM](http://WWW.TNE MEC.COM) FOR ALL YOUR COATING NEEDS.