

THE WHITE RUST PROBLEM



Galvanized steel is a long-lasting material for evaporative cooling equipment, but it can develop premature zinc corrosion known as "White Rust" if not properly passivated. Passivation helps create a protective oxide layer on galvanized surfaces, but many operators lack the time to do this before using the equipment under a heat load. The industry lacks practical solutions for minimizing white rust on new galvanized surfaces when equipment is quickly put into operation. To the left, you see a coil with white rust, a premature zinc corrosion often seen in new evaporative units with galvanized steel, characterized by white, fluffy, or waxy deposits as defined by the Association of Water Technologies (AWT).

STEP 1 - Passiv-Assist™ Factory Applied Pretreatment

After a new coil is hot-dipped galvanized, EVAPCO applies a proprietary chemical pretreatment to reduce the potential for white rust formation. Coils with this factory pretreatment develop less white rust than untreated ones across various water qualities and treatment programs. The pretreatment doesn't fully passivate the coil, it speeds up field passivation and improves its effectiveness.



STEP 2 - Field Passivation

The site-specific field passivation service includes EVAPCO inhibitor chemistry, feed and control equipment, and routine service visits by a local Water Treatment Partner. This process typically lasts 6-10 weeks, compared to other field passivations that can take up to 12 weeks or require continuous white rust inhibitor feeding throughout the equipment's lifespan.



THE BENEFITS

- Factory pretreatment (Passiv-Assist) accelerates and improves field passivation, even for units needing immediate heat load.
- Field passivation is customized for each location and makeup water quality.
- EVAPCO's Factory Authorized Water Treatment Partners are trained for field passivation.
- Factory Mounted Pulse~Pure® and Smart Shield® systems have ports required to connect the temporary passivation panel.
- The passivation plan forms a passive oxide layer, eliminating the need for white rust inhibitors throughout the unit's life.
- The EVAPCO Passivation Solution is effective for a wide range of applications, including cold storage warehouses, food and beverage processing facilities, manufacturing plants, and commercial HVAC systems, across various makeup water qualities, providing outstanding results.

