



Opening the Door to Better Pretreatment, Less Cost, and Improved Performance

The Challenge

A commercial steel door frame manufacturing company ran into trouble with their iron phosphate pretreatment system when the local wastewater treatment facility began noticing higher metal levels in its effluent. The local treatment district began issuing fines to the company, which accumulated as the manufacturer sought a way to get their system back into compliance and avoid having more stringent regulatory measures taken against them.

The Approach

Hubbard-Hall had been working with the door frame manufacturer and was called in to help the company solve the matter. It was discovered that the manufacturer had switched from a press brake to a roll former in its production process, which unknowingly was fracturing the electro-galvanized coating from the surface of the steel.

Hubbard-Hall representatives quickly assessed the change in the manufacturing process — and the subsequent high levels of zinc, nickel, and other metals that were going into the waste discharge — and soon recommended two changes that could solve the issues.

- Change the manufacturer's four-stage pretreatment to a closed loop zero-discharge system eliminating any waste from going to the drain.
- Change the pretreatment chemistry to utilize one that is zirconium-based to handle the closed loop zero discharge process.

In Brief

A door frame manufacturer replaced its iron-phosphate pretreatment with zirconium-based **Eco Quest NCS 172-LF** to eliminate citations by its local wastewater treatment agency.

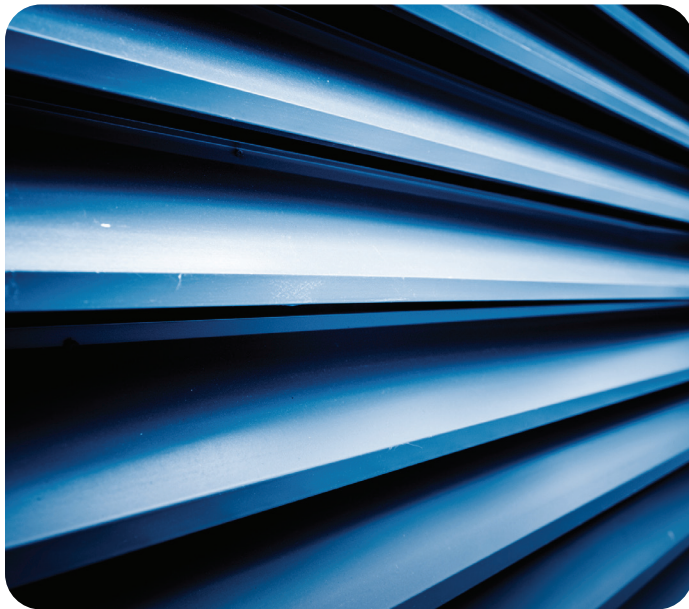
Hubbard-Hall helped convert the line to a closed loop zero-discharge system to avoid issues and to help reduce dumping and other costs by more than \$20,000 per year. The manufacturer realized improved salt-spray test results with the **Eco Quest NCS 172-LF** because of its advanced nano zirconium composition.

The Outcome

The manufacturer began using **Eco Quest NCS 172-LF** (low foam) chemistry that offers advanced, low foam cleaning, conversion coating, and final rinse passivation in a single product. The product is moderately alkaline zirconium for the treatment of steel, aluminum and galvanize. The Nano + Zirconium product provides a level of cleaning, bonding, and anti-corrosion properties providing enhanced bonding and adhesion.

The **Eco Quest NCS 172-LF** in stage one is followed by two rinses and then a fourth tank with 1% NCS 172 in it; the system is counter-flowed back upstream, thereby eliminating rinse water and carryover to help eliminate any problems with the local wastewater treatment district.

In addition, the manufacturer saw significant improvements in its salt-spray testing results as **Eco Quest NCS 172-LF** zirconium-based product provided better protection than the older iron-phosphate system. The tanks are pumped out quarterly, which saves the company in excess of \$20,000 annually in reduced costs; the manufacturer is even exploring going to just two cleanouts a year, which would save them considerably more.



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