



NERCON
ENG & MFG., INC.

Why Does Stainless Steel Rust and How Can it be Prevented?

Passivation is important to the treatment of stainless steel in the manufacturing of conveyors.

Typically stainless steel is resistant to rust because the outside layer protects the underlying layer. Stainless steel can rust if there is something that removes the outside oxide protective layer. In the conveyor fabrication process, any stainless steel that is cut will expose the free iron in the material. It is the free iron that causes rust and corrosion.



Passivation is a process of treating stainless steel material to form an outer oxide protective "passive" layer of film. One method of passivation uses mineral acids, such as nitric acid. The use of these types of acids poses a health risk to employees who work with it and is difficult to transport and discard.

Nercon uses an environmentally safer and biodegradable citric acid compound for passivation. It results in enhanced removal of free iron from the surface, and passivation using citric acid passes all salt spray, immersion and high humidity tests.

The use of citric acid passivation has been tested to produce superior results. As an example, Nercon uses citric acid passivation when making shafts. Should a conveyor or stainless steel component be altered after installation, manufacturers can apply citric acid to "re-passivate" the altered area.

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