

Electro-Polishing Recommendation Acceptance / Refusal

Stainless Steel is the most corrosive resistant metal available for railing construction, but Stainless Steel does require maintenance which is variable depending on the area. In certain areas there is significant risk of corrosion due to harsh environmental conditions, particularly salt water environments. Atlantis Rail recommends Electro-Polishing for any project within a few miles of the ocean in order to offer the highest possible degree of corrosion resistance, and the least necessary maintenance.

We can use a special grade of Stainless Steel Tube with favorable corrosion resistance against salt water environments to make the post and rails, but fittings and fasteners present a greater challenge. Fittings and fasteners are forged and/or machined parts which by nature require processes that add and take away material, unlike the better controlled process used in making rail material. These processed leave more surface imperfections, even if they are not visible to the eye initially.

Atlantis Rail exclusively uses New England Electro-Polishing as our electro-polishing service provider; www.neelectropolishing.com. We offer a few different options and we welcome you to ask any questions you have regarding the additional treatment. Please refer to page two of this document and to the New England Electro-polishing web site for information regarding the process and its many benefits.

Electropolish Option 1:

Price: 15% of order total

Electro polish fittings and fasteners only. Use domestically manufactured high polish tube for rails.

Electropolish Option 2:

Price: 25% of order total

Electro polish fittings, fasteners, post, and rails.

Electropolish Option 3:

Refusal of Process

Customer Selection: Option _____

Customer Signature: _____ Date: _____

Customer Name Printed: _____

Atlantis Rail Electro Polishing Services

The Benefits

Electro-polishing removes elemental Iron from the surface of stainless steel alloys, enhancing the chromium/nickel content resulting in dramatically improved resistance to corrosion.

Electro-polishing improves the near surface chemistry of stainless steel. Not only does it remove embedded particles and inclusions, it also improves the atomic ratios of the materials alloying elements. Electro-polishing preferentially dissolves Iron from the material and leaves the surface with a higher relative concentration of Chromium. Upon exposure to oxygen, this improved surface will form a thicker and more uniform oxide layer with enhanced corrosion resistance properties.

Electro-polished stainless steels are better suited to resist the onset of pitting corrosion, crevice corrosion, stress corrosion cracking, and microbiologically influenced corrosion.

Improves surface smoothness by leveling micro peaks and valleys resulting in easier maintenance.

Improved micro finishes can do more than improve the appearance of a part, it eliminates potential traps for corrosive elements. The electro-polishing process may improve a surface finish reading by up to 50%. Because electro-polishing is not a surface coating, there is no risk of the surface distorting or peeling over time, unlike spray on surface treatments sometimes used to improve stainless surfaces.

Provides most superior form of passivation in stainless steel.

Electro-polishing removes surface material and, with it, surface contaminants. The process dissolves free Iron, inclusions, and embedded particles from the surface. Electro-polishing preferentially dissolves Iron from the material and leaves the surface with a higher relative concentration of Chromium. Upon exposure to oxygen, this improved surface will form a thicker and more uniform oxide layer with enhanced corrosion resistance properties.

As a result, electro-polishing provides maximum corrosion resistance in stainless steel. Electro-polished stainless steels are better suited to resist the onset of pitting corrosion, crevice corrosion, localized galvanic corrosion, stress corrosion cracking and microbiologically influenced corrosion.

Improves surface brightness and reflectivity.

The most visible benefit of electro-polishing is the resulting lustrous surface. Electro-polishing is a non-mechanical process. No tools come in contact with the piece so there is no risk of creating directional polishing lines. The material is treated electrochemically, leaving a microscopically smooth surface that is highly lustrous.

Removes metallic and non-metallic inclusions unavoidably introduced during manufacturing.

Mechanical cutting, machining, handling and polishing will leave Iron and abrasive particles embedded within a material surface. These surface contaminants disrupt the formation of stainless steels' (and other corrosion resistant materials) naturally corrosion resistant oxide layer and are the origin of future corrosion. Electro-polishing removes surface material and, with it, surface contaminants. Electro-polishing dissolves free Iron, inclusions, and embedded particles from the surface.