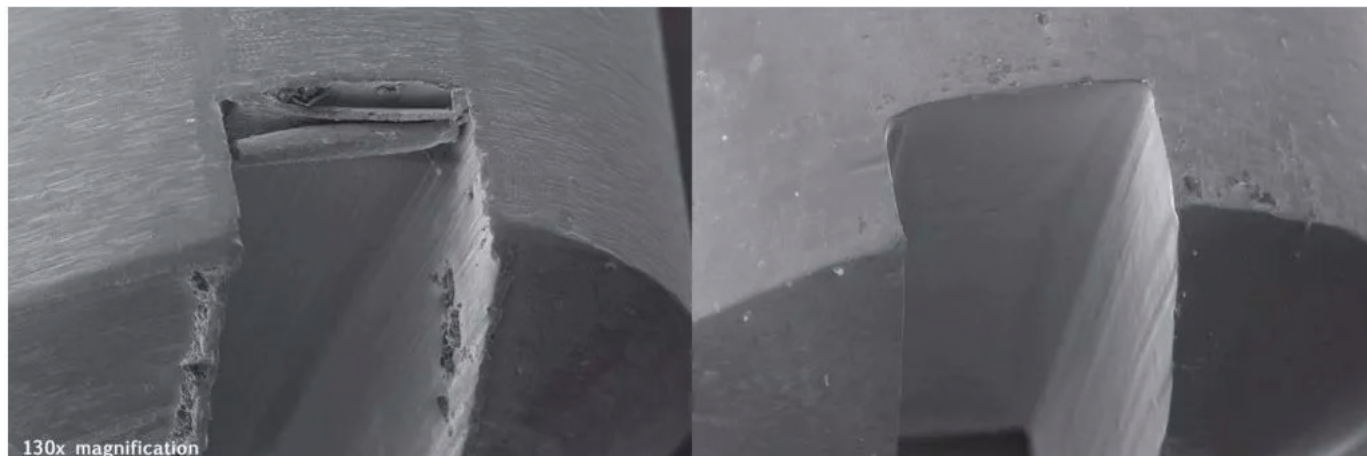


ΤΙ ΕΙΝΑΙ Η ΗΛΕΚΤΡΟΣΤΙΛΒΩΣΗ ΑΝΟΞΕΙΔΩΤΟΥ ΧΑΛΥΒΑ (ELECTROPOLISHING);



ELECTROPOLISHING (Πριν & Μετά)

Η ηλεκτροστίλβωση του ανοξείδωτου χάλυβα είναι μια διαδικασία «αντίστροφης επιμετάλλωσης» που χρησιμοποιεί ένα ηλεκτροχημικό διάλυμα για την αφαίρεση του εξωτερικού «δέρματος» ενός μεταλλικού τμήματος.

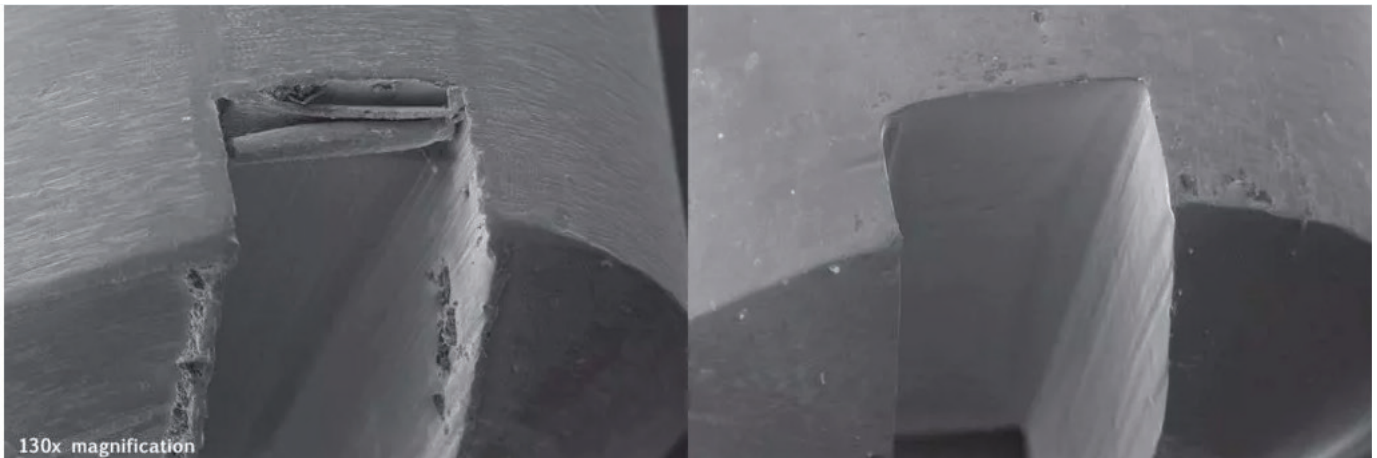
Αφαιρώντας ένα ομοιόμορφο στρώμα επιφανειακού υλικού, η διαδικασία ηλεκτροστίλβωσης αφαιρεί επίσης ενσωματωμένους ρύπους, θερμική απόχρωση και άλατα οξειδίου, γρέζια, μικρορωγμές, κοιλώματα και άλλες επιφανειακές ατέλειες που μπορούν να θέσουν σε κίνδυνο την απόδοση και τη μακροζωία ενός εξαρτήματος.

Η ηλεκτροστίλβωση του ανοξείδωτου χάλυβα βελτιώνει σημαντικά την αντίσταση στη διάβρωση ενός εξαρτήματος, αφήνοντάς του ένα διαρκές λαμπερό φινίρισμα.

Η ηλεκτροστίλβωση μπορεί να πραγματοποιηθεί σε όλες τους τύπους ανοξείδωτου χάλυβα και παρέχει στα ανοξείδωτα μέρη όλων των ειδών, αντίσταση στη διάβρωση ανώτερη από την κλασική - τα ηλεκτρογυαλισμένα μέρη είναι 30 φορές πιο ανθεκτικά στη διάβρωση.

Η διαδικασία ομοιόμορφης διάλυσης ενός επιφανειακού στρώματος μετάλλου είναι πιο επιθετική και πιο αποτελεσματική και επειδή είναι εξαιρετικά ελεγχόμενη, μπορεί να χρησιμοποιηθεί για την αφαίρεση τουλάχιστον 0,0002" επιφανειακού υλικού.

WHAT IS STAINLESS STEEL ELECTROPOLISHING?



Electropolishing of Stainless Steel Before & After

Electropolishing is a surface treatment whereby the metal to be polished acts as an anode in an electrolytic cell, dissolving it. With the application of current, a polarized film is formed on the metal surface under treatment, allowing metal ions to spread through said film. The micro and macro projections and high points of the rough surface, as well as the areas with burrs, are areas of higher current density than the rest of the surface, and dissolve faster, giving rise to a smoother surface. level and/or therefore less rough. Simultaneously, and under controlled conditions of current intensity and temperature, a surface polishing takes place.

The great advantage of stainless steel is that, as iron is a metal that dissolves easily, the chromium and nickel content on the surface is increased, thus increasing resistance to corrosion.

On a macroscopic scale, the contour of a surface can be thought of as a series of peaks and valleys. The depth of the peaks and the distance between the peaks depend on the methods used to refine the surface finish.

At a microscope scale, the surface is even more complex, with small irregularities superimposed on the peaks and valleys. In order to produce a truly smooth surface, both types of irregularities (macroscopic and microscopic) must be removed.

Thus, the functions of an ideal polishing process can be distinguished as:

- a) **Smoothing:** remove large-scale irregularities (size greater than 1 micron).
- b) **Polishing:** remove small irregularities smaller than hundredths of a micron.

Advantages of Electropolishing in the Manufacture of Stairs

Focused on the manufacture of stainless steel stairs, the use of this process allows to obtain smooth and shiny surfaces, with sanitary conditions, due to the absence of scratches that prevent access to the cleaning products used to treat the pool water, (chlorines, various additives, pH levelers, etc.) and that can become sources of contamination by microorganisms and/or initiate localized corrosion processes.

From a technical point of view, electropolishing allows irregularly shaped parts to be treated (corners, welding gaps, etc.). Thus, for example, the treatment of the threaded holes of the stair handrails, where the steps are housed, is much more effective and efficient, because when working by immersion, the entire hole and thread is cleaned, and not just superficially.

Also, when working with an electropolishing bath, the handrail tube is treated internally (welding, scratches from the pipe profile, etc.). This prevents corrosion processes inside the tube of the stair handrails, which, as they are not watertight, are also in contact with the water on their inner faces, untreated in the case of polished stairs.

The electropolishing allows to treat the edges, in the cuts, incisions, etc., for example ends of the handrails, or in the case of the steps, (holes for fixing the plastic non-slip, stapling areas to the plastic support, hole and cut earth connections, etc.).

Electropolishing in stainless steel allows to increase resistance to corrosion since the process allows to eliminate the superficial layers formed by lamination and polishing tasks, leaving on the finished surface an extremely thin and transparent layer of chromium and nickel oxides that gives it an excellent passivity in relation to numerous chemical reagents.

Electropolishing in stainless steel allows to eliminate the coloration due to welding or heating processes, carrying out a previous pickling with the deoxidizer-passivator, the welds are efficiently treated, eliminating scale, impurities and chemically stabilizing them against the start of corrosion processes.

Electropolishing in stainless steel allows to reduce the tendency of liquids and solids to adhere to the surface, improving cleaning and draining aspects, very important aspects in all accessories in the world of swimming pools.

In order to produce the best results, the metal must be homogeneous and free of surface defects. Flaws, which are normally hidden by mechanical polishing, are revealed; and even more; are exaggerated by electropolishing (eg inclusions, casting defects, scratches, etc.).

The type of finish produced by electropolishing is totally different from that produced by mechanical polishing. In the latter, a specular surface is produced because it "forces" the material to present a uniform plane and reflects light in only one direction.

In electropolishing, the surface is different, since although it is free of scratches and stresses, it has a three-dimensional structure that reflects light in all directions, which gives it a satin-gloss appearance, not so luminously mirror.

Applications

According to the characteristics of the electropolishing process explained above, some of the possible users are:

- Food industry in general, mainly dairy, brewing, wine and refrigeration.
- Chemical, plastic, mechanical industries.
- Manufacturers of surgical and dental instruments, medical and hospital sector.
- Manufacturers of machines and elements for the industry in general.

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