

#1088 - Improving Finish and Corrosion Resistance with Brite Passivation

INDUSTRY:

Other - Manufacturer of cages and containers for animals

MFG/METHOD:

Wire forming and welding

ALLOY:

304 stainless steel



PROBLEM:

This stainless steel part is used in animal containment systems, both in laboratory and consumer applications. As part of an assembled wire form that is subjected to harsh cleaning solutions, this part is highly prone to corrosion. Fabrication and normal welding also left the part with a dull appearance and discoloration spots where the wires are attached to each other. Ultimately, the client needed to improve corrosion resistance and the part's appearance at a low cost, and with better efficiency than manual stainless steel polishing.

SOLUTION:

As a process that can uniformly clean even intricate, complex parts, electropolishing was the ideal solution for this client. This process removes a uniform layer of surface metal by submerging the part in an electrochemical solution—this allows us to reach the entire surface area in one efficient step. For this part, Able Electropolishing used our signature Brite Passivation process. This is a light form of electropolishing that cleans and polishes a part while improving its corrosion resistance.

Because Brite Passivation treats the entire surface area simultaneously, the part is left with a uniform, clean and shining finish. Electropolishing like this also strips away the discoloration spots left by welding, where corrosion can originate. With this single-step process, the finished part was highly corrosion resistant, exceeding customer specifications.

Note to Engineer. Complex and expensive assemblies do not lend themselves to bulk finishing methods. Those assemblies are often finished with poor uniformity and/or become warped or distorted. Manual stainless steel polishing parts like these can be prohibitively expensive and tedious. In these cases, balancing the efficiency of mass finishing with the quality of hand finishing often yields the best results.