

Expanite surface hardening replaces hard chrome plating in the food industry

Expanite, the surface hardening specialist replaces hard chrome plating at LIAG® LÄUFER INTERNATIONAL AG and solves abrasive wear and corrosion challenges in the field.

The Challenge: Abrasive wear – and long-lasting corrosion resistance to keep food safe

LIAG® LÄUFER is a specialist in hygienic shutter valves and pigging systems. The products are designed to meet the highest safety demands in the food industry, and must withstand significant abrasive wear and corrosion aggressive environment. Their stainless steel cones were originally specified with hard chrome plating. Due to the potential health risks however, hard chrome plating is increasingly prohibited in the food industry. LIAG® LÄUFER needed to find an alternative. In their attempt to solve these challenges LIAG® LÄUFER tried different surface hardening solutions, which all failed, including a commonly used carburizing process, which caused corrosion after short time in use.



The Solution: Expanite treatment offers surface hardness and increased corrosion resistance!

LIAG® LÄUFER finally tested Expanite and found a hardening solution that effectively reduces wear and galling, and at the same time improves corrosion resistance of the parts.

Sustainable and environmentally friendly solution

LIAG® LÄUFER is determined to offer environmentally sustainable solutions to comply with the industry demand to exclude chrome in the food industry. Expanite hardening solution is a diffusion-based process and therefore significantly more environmentally friendly and sustainable compared to other hardening methods.

Lars Meesmann - Project Engineer at LIAG® LÄUFER says: "Our cooperation with Expanite was highly successful. *We are very satisfied with the impressive results of the unique Expanite technology which completely meets all our demands and expectations. Expanite's support, knowledge and experience throughout this project have been first-class*". Mr. Lars Meesmann continues: "The technology is very flexible - and applicable independent of geometry of the product. The superior corrosion properties, lead-time and even a price competitive solution enables LIAG® LÄUFER to supply customers with high end and environmentally safe products".

The Expanite Surface hardening process

The patented Expanite process doesn't add anything to the material (besides nitrogen and carbon), it just makes the surface harder — as much as 10 times harder. Sales Manager Dr. Holger Selg explains: "The process begins with treating stainless steel parts under certain atmospheric conditions, which diffuses nitrogen and carbon atoms into the surface of the part. It passes ASTM tests, and the resulting products meet all FDA regulations and are ISO 9001:2015 compliant. We're only diffusing nitrogen and carbon into the surface of the workpieces, so it's called surface hardening".





About Liag

LIAG® offer hygienic valves and pigging systems in maximum quality and reliability for the processing of high-value media and, at the same time, represent the ideal basis for competitive production. More about Liag: <https://www.laeufer-ag.de/en/>

About Expanite

Expanite is based on research since 2000 and was founded in 2010 by leading experts in materials and surface hardening. The company is headquartered in Hillerød near Copenhagen and has treatment centers in the USA, Germany and China. Expanite's solutions are flexible and can be tailored into a customer's own product line as part of a licensing agreement. More about Expanite <https://www.expanite.com/surface-hardening-of-stainless-steel/>

