



Surface treatment of stainless steel
ADDING PERFECTION



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Over a century of specialisation in stainless-steel surfaces

If we may be so bold, we can call ourselves specialists. We have been processing and refining stainless-steel components since 1930.

However, we would rather look to the future than the past. Every day, we strive to improve our techniques and production methods. Our surface treatment specialists and chemists regularly develop new solutions to help you meet the challenges you face.

We have developed Europe's most advanced technology and boast the highest capacity for electropolishing. We can process many different steel grades, sizes and shapes.

Let us take care of the surface treatment of your components. Our production facilities offer generous headroom, enabling us to handle everything from pin-sized components to constructions weighing several tonnes. At Calamo, your components get a "face lift".

You can leverage our knowledge and work together with us to develop and improve your products. This could be anything from training, analysis and testing to consultation.

Adding perfection is our mission. Yesterday, today and tomorrow.



When is an electropolished surface needed?

- When you need a surface layer that offers better corrosion protection
- When you need a smooth surface that is easier to clean
- When hygiene requirements need to be met
- When there is a risk of roughing

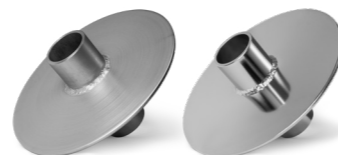


Application areas

- Pharmaceutical manufacturing
- Sterilisation and disinfection equipment
- Food industry
- Paper and pulp industry
- Renewable energy
- Process industry
- Aerospace
- Semiconductor



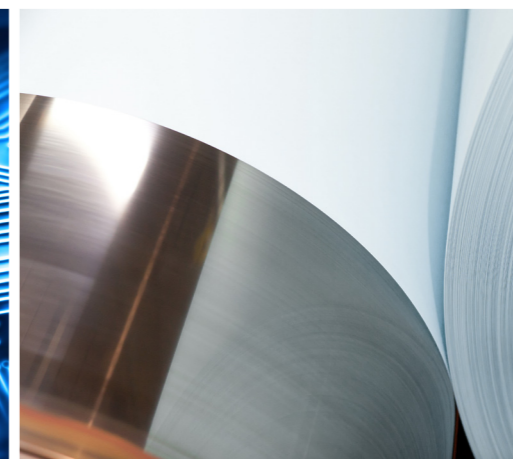
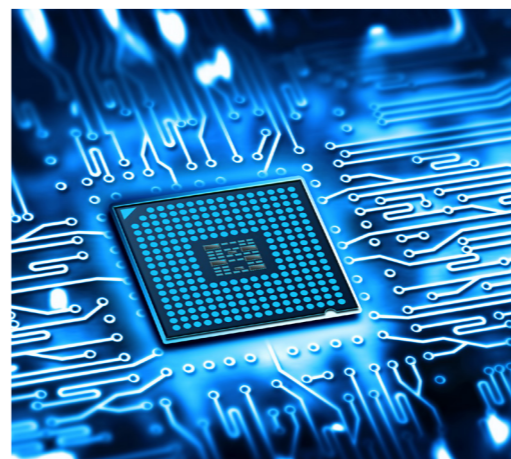
Electropolishing increases the value of your stainless-steel surface



The ultimate surface treatment

Electropolishing is an electrochemical process that dissolves and removes about 0.02 mm of the surface layer. The end result is a smooth and even surface, free from impurities and with improved corrosion protection, durability and washability.

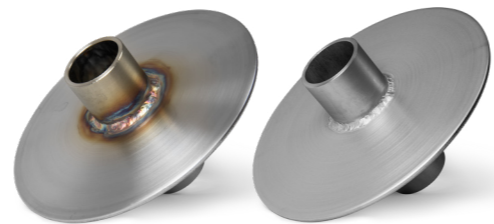
Thanks to 50 years of experience and continuous development, we can offer electropolishing for a variety of steel grades, sizes and shapes. Our electropolishing facility can offer contract electropolishing for everything from pin-sized components to heavy vessels and constructions weighing up to five tonnes.





When is a hot-pickled surface needed?

- For uniform metallic purity without impurities
- To avoid undesirable corrosion or discoloration due to inherent impurities in the steel
- For aesthetic reasons as pickling creates a smooth and even surface



Application areas

- Pharmaceutical manufacturing
- Food industry
- Paper and pulp industry
- Aerospace



Pickling for a clean and passive surface

What is hot pickling?

If you need a clean and even surface free from oxides, impurities and discolorations, then hot pickling is the optimal surface treatment for stainless steel. Hot pickling, also known as NOX pickling, is unique because the entire

surface is treated rather than welded oxidized areas only. Hot pickling is the best pre-treatment prior to electro-polishing as it prevents etching and an uneven finish. We can pickle austenitic, ferritic and austenitic-ferrite (duplex) steel grades as well as titanium.





Areas of application

- Hospital
- WFI
- High-purity gas
- Heat exchanger
- Semiconductor
- Pharmaceutical



Key factors

- Chemical analysis of the steel, tolerances, surfaces, markings, packaging and certificates
- The surface treatment process is adapted to each product and is thoroughly documented
- Stored and protected in dry, heated premises
- Protected with nylon film, PE plugs and single PE sleeves and delivered in special wood packaging approved for export



Tubes and fittings for all needs

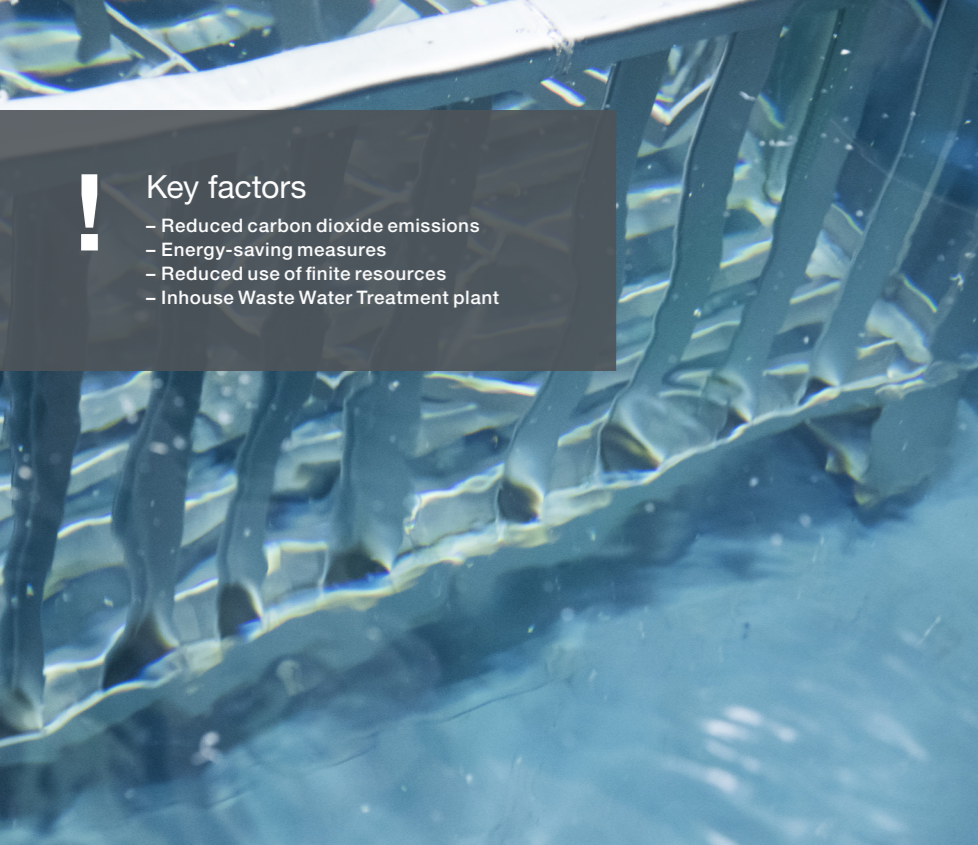
We offer stainless steel tubes and fittings for a variety of applications and environments with strict hygiene requirements, and our rigorous purchasing specifications ensure that the raw material meets these strict requirements.

The advantages of our surface-treated tubes and fittings are that this prevents bacterial growth on inner surfaces, increases resistance to pitting corrosion, improves surface smoothness and prevents surface impurities and contamination.

Our quality control encompasses everything we do

The entire process – from delivery inspections to final quality control – takes place in our spacious and protected manufacturing plant. This gives us full control over quality and lead times throughout the entire process. All of our products can be delivered with an inspection certificate compliant with EN 10204 3.1.

The surface treatment process is adapted to each product and is thoroughly documented. Every step of the process also involves checks, analyses and any necessary adjustments. All employees work in accordance with documented work instructions.



Key factors

- Reduced carbon dioxide emissions
- Energy-saving measures
- Reduced use of finite resources
- Inhouse Waste Water Treatment plant



Key factors

- Inhouse laboratory
- Surface treatment techniques optimised for your products
- Development of surface treatment techniques for different metals

Working towards a sustainable future

We strive to reduce the environmental impact of every stage of our manufacturing process and work actively with process development to reduce water consumption, chemical use and waste.

Our R&D department works hard to identify alternative chemicals and increase the recycling of electrolytes and metals. Our ISO 14001:2015-certified environmental management system provides important support in these efforts.

Every day we strive to improve

The surface treatment specialists and chemists at our R&D department regularly develop new solutions to help you meet new challenges. In our laboratory, you can let us take care of your samples and perform analysis of the surface, assess the technical properties and develop a surface treatment technique for your needs.

We can work together to modify and update your products to increase your competitiveness in the market, through either training, analysis and testing or consultation.

Calamo specialises in the electropolishing, pickling, cleaning and clean room treatment of tubes and components. Our services are used within fields such as food, life science, hospitals, energy, paper and pulp, aerospace, semiconductors and medtech.

Our customers are found everywhere, often in extreme environments with specific requirements within cleanliness, hygiene, washability, corrosion resistance and durability.

Our facilities enable us to meet the most varied and strict requirements, with the ability to handle everything from pinhead sized components to constructions weighing several tonnes.

Products leaving Calamo are quality controlled and certified, ensuring consistency and peace of mind for our customers.

Read more about us and our products at calamo.se/en

Feel free to follow us on LinkedIn

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