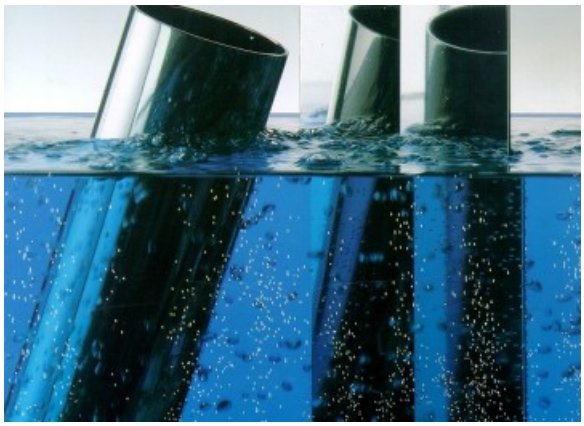
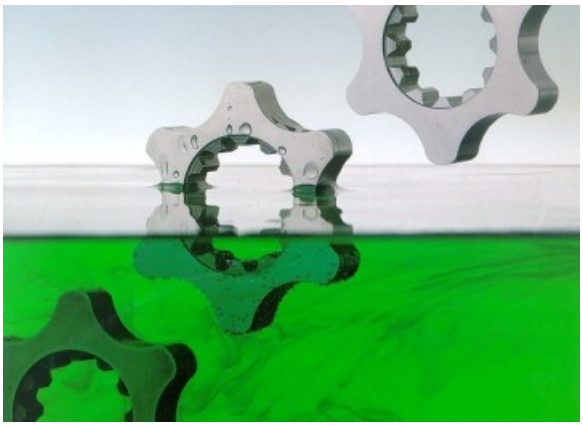
VALUE ADDED
THROUGH SURFACE TECHNOLOGY

POLIGRAT

IMPROVING METAL



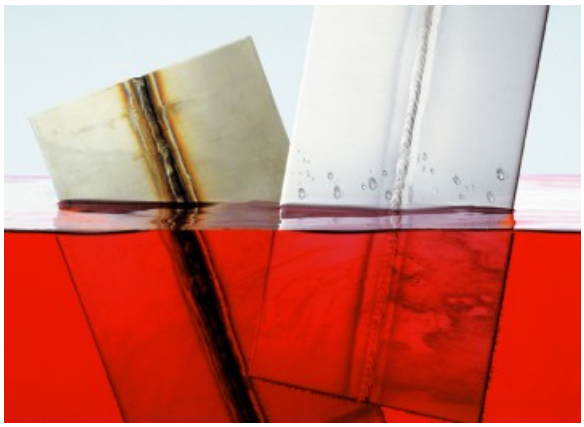


FINISHES OFFERED

- Decorative Surfaces
- Functional Surfaces
- Burr-free Surfaces

OUR PROCESSES

- Electropolishing
- Chemical Polishing
- Deburring
- Pickling
- Passivating
- Cleaning
- Derouging
- Colouring/Anodizing
- Coating
- Processes for Nuclear Industry



OUR SERVICES

- Plants & Equipment
- Chemicals
- Subcontract Work
- Engineering & Development

MATERIALS

- Aluminium
- Stainless Steel
- Cobalt Alloys
- Carbon Steel
- Copper
- Copper Alloys
- Magnesium
- Nickel
- Nickel Alloys
- Rare Metals
- Titanium
- Zinc
- Zirconium

NEWS

POLIGRAT stattet Marienplatz in München aus POLIGRAT equips Marienplatz in Munich



MESSEN

Stainless Steel World
Maastricht / Holland
28.11. - 30.11.2017

All trade shows

VALUE ADDED THROUGH SURFACE TECHNOLOGY

Decorative surfaces

Many metal surfaces lay claim to a need to look good as well as being functional! Our processes combine optics, haptics, structure and functionality including smoothness/shine, anti-graffiti and easy-to-clean properties. The result will be decorative surfaces of the highest quality!

Functional surfaces

Increased process safety, reduced maintenance, longer life, improved product quality and cost-effectiveness are just some of the advantages you can achieve through the optimisation of surfaces. In just one single operation, POLIGRAT processes can achieve the combination of several functional properties, including fatigue strength, corrosion resistance, passivity, cleanability/sterile properties, freedom from burrs and many others.

Burr-free surfaces

Burrs on metal surfaces are produced during manufacture and can at worst make the components unusable. Accordingly, in order to guarantee proper functioning, metal surfaces must be deburred. Depending on the material and the demands to be made of the surface, this can be achieved through various processes.

Electropolishing

Electropolishing (and electrochemical polishing) is a production process which removes material. Metal is removed anodically using electrolytes that are specially adapted to suit the material concerned. The aims of electropolishing include a reduction to the roughness of the surface, in other words deburring, together with smoothness and shine. The electrolytes used (chemicals) vary depending upon the metals to be processed. We offer electropolishing for workpieces made of aluminium, stainless steel, cobalt alloys, carbon steels, copper and copper alloys, magnesium, nickel and nickel alloys, titanium, zinc, zircon and special metals.

Chemical polishing

By removing material chemically it is possible to deburr and polish the workpiece in inaccessible places; incipient cracks are removed. In contrast to electropolishing, chemical polishing is a currentless process. As in the case of electropolishing, chemical polishing also removes material in places that are inaccessible when using mechanical processes. Chemical polishing is suitable for normal steel, carbon steels, titanium, zircon, copper and copper alloys.

Pickling

Pickling is used in the field of electroplating technology as a surface treatment process, especially in order to provide metal workpieces with protection against oxidation. An oxide-free surface is created which can also be used for pre-treatment before further surface treatments. Depending on the material and the structure of the workpiece in question, the correct chemical mixture for the pickling solution, the application time and temperature are determined. The process is often supported by the application of electric current. Pickling is used in general for workpieces made of aluminium, stainless steel, cobalt alloys, carbon steels, copper and copper alloys, magnesium, nickel and nickel alloys, titanium, zinc, zircon and special metals.

Passivating

In surface technology, by passivating we understand the spontaneous development or deliberate formation of a protective layer on a metallic material which will prevent or considerably slow down the corrosion of the basic material. The targeted creation of the passivation can be achieved either by immersion or by spraying processes.

Cleaning

The pharmaceutical and semiconductor industries and high-vacuum technology are just some examples of situations in which the cleanliness of components plays an important part. Our cleaning processes permit the removal of unwanted layers or particles from metal surfaces, in order to ensure the quality of subsequent processes, to restore corrosion resistance while removing corrosion products, lime deposits and other contaminants and even to create ultra-clean functional surfaces.

Derouging

The naturally occurring passive layer on stainless steel surfaces can age, so that a rust-red coating, known as rouging, is formed. Rouging is generally not acceptable. Fears arise that foreign particles might be released from the coatings, thereby preventing a safe completion of the intended process. Derouging – the chemical removal of the rouge layer – is carried out with the assistance of cleaning chemicals that do not attack the stainless steel.

Colouring (Anodising)

Dyeing (anodic oxidation**)** is the term applied in surface technology to an electrolytic process (immersion bath) for the creation of oxide layers on metals. It is used for protection from corrosion and chemical (technical applications) or to produce decorative surfaces. POLIGRAT offers colouring (anodising) on stainless steel, titanium and zircon.

Coating

The coating of metal surfaces is carried out to protect the surface, for example against corrosion, chemicals, fingerprints, graffiti and general contamination etc., or for decorative purposes, for example in architecture. The coating is applied by spraying, immersion or rolling and is then burnt in. The process can be used on virtually all metals.

Processes for nuclear technology

In nuclear technology the main tasks involved are decontamination and the preparing and conditioning of the chemicals which arise for final disposal. POLIGRAT has developed processes to deal with these high demands which can be carried out through the supply of installations and chemicals directly on site, in wage work or by the customers themselves.

Installations / Chemicals

All POLIGRAT processes can also be used by your company directly, on your own premises. In this case we can supply you with the installations which are specially adapted to meet your needs and requirements (including installations for waste water treatment), together with the appropriate chemicals. Of course you will receive instructions and training on site, together with the necessary support.

Engineering & Development

With its diverse portfolio POLIGRAT offers not only its processes, but also problem solutions which are directly adapted for and with its customers! New and further developments of special processes and products stem from our own research and development department. Customer-specific production technologies are developed in cooperation with the development departments of our customers.