

The Plus Impulse



We provide innovative, both functional and highly decorative surfaces, precisely adapted to your sectoral requirements and perfect in operation.

We prepare any light metal for its specific application.
In other words: Regarding its operational place of installation with CERANOD® the light metal becomes either safer, more elastic, more resilient, denser or harder. Or all at the same time, definitely.

How can we guarantee?
With a variety of refinements for light metals and alloys by CERANOD®-processes.



CERANOD®

CERANOD® ANODIZATION

Technical details:

- 5-25 µm, 200-350 HV
- technical surface for precision parts, fits and dimensionally stable assemblies
- decorative e.g. for design and indoor applications, natural silver and colored
- size up to 3000 x 6000 mm
- weight up to 2.5 t

Natural anodization provides a classical refined aluminium surface. By anodic treatment in an acidous electrolyte the resilient aluminium oxide hydrate is generated out of the substrate.

Our CERANOD®-process guarantees a reliable anchoring of the surface, exceeding by far conventional coatings but on the other hand coming along with dimensional changes. The reason for this shift is the growth of the oxide layer which goes into the substrate by two-thirds and out of the surface by one-third. In presence of fits in high precision parts this behaviour has to be considered!

Besides chemical pretreatments a number of mechanical finishes such as grit blasting, grinding, brushing or polishing can be applied.

In contrast to painting and electroplating no additional layer is deposited on the substrate. The new layer does not adhere in common sense but instead develops covalent chemical bondings to the basic material.

Due to its tubular structure the anodized oxide layer is suitable for dyeing with a large variety of colors. Pigments can be incorporated and locked up into the oxide hydrate tube. This way the pigment is protected and will not separate or bleed.

Contrary to other spray coatings our CERANOD®-process even reaches enclosed surfaces and undercuttings of tiny parts.

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CERANOD® HARD ANODIZATION

Technical details:

- 10-100 µm, 450-600 HV
- for specific requirements, e.g. machine construction, tooling, medical and optical engineering
- PTFE-inclusion reduces friction coefficient 3-5 times
- size up to 3000 x 6000 mm
- weight up to 2,5 t

With this advancement of the natural anodizing process we can create way thicker, harder and much more resilient oxide hydrate layers. We permanently redesign chemical and physical parameters and adjust them to your individual requirements.

For that reason we need to know the exact composition of the alloy we are working with. Using X-ray fluorescence analysis, we are able to preselect the correct treatment of the individual part and so we anodize only mono-alloy batches. Working this way we are in the position to – also during the process – react on slightest deviations.

We give warranty even for 2000 and 7000 series alloys as well as for alloys which are, according to DIN, not suitable for anodizing.

Hard anodized layers grow one half to the inside of the substrate and one half to the outside. Hard anodized technical CERANOD® surfaces are very often employed in rapidly moving parts or assemblies.



CERANOD® NANO CERAMICS

Technical details:

- 10-200 µm, 800-2400 HV
- for extreme requirements in connection with corrosion and wear
- very dense ceramic coating with hardness up to 2400 HV
- homogenous edge surrounding
- armored protection for light metals
- FDA compliant

CERANOD® nano ceramics is the surface technology of the future! The nearly indestructible corundum layer (the resulting micro-crosslinked nano structured surface ranks among the five hardest materials in the world) is able to resist wear up to 1000 times better than standard anodized aluminium without increasing neither volume nor weight of the light metal. At the same time field requirements such as ductility and plasticity are fully preserved!

By plasma ceramic discharge in an electrolyte the metal surface is converted into an extremely dense ceramic layer, which adheres to the substrate by atomic bonding. The atomic bonding is the most stable form of bonding in the world. For that reason the plasma ceramic process outclasses any other ceramic deposition processes.

The plasma ceramic process evolves a homogenous coating with defined thickness, ranging from 10 µm up to 200 µm. The coating is extremely hard and wear resistant: For magnesium the hardness lies around 1100 HV and for aluminium around 1300 up to 2400 HV. This CERANOD® coating withstands short-period temperatures up to 2000 °C without changing the surface properties.

With its specific structure the nano ceramic surface is rather suitable for cold or hot impregnation with PTFE, sealants, adhesives and industrial paintwork such as powder or cataphoretic painting.

The coating is absolutely environment friendly! By applying this method we only use non-toxic, heavy metal and vapour free reagents. We guarantee: CERANOD® nano ceramics is entirely recyclable.

CERANOD® HYBRID

Technical details:

- 30-200 µm, up to 2000 HV
- pathbreaking high performance surfaces with individually combinable properties provide USP
- 100.000 times more wear resistant than anodized surfaces
- persistent low friction coefficient
 - proven and tested for continuous operation
- FDA compliant

Our CERANOD® hybrid surfaces provide unrivaled durable protection for high tec part and product surfaces – against both corrosion and wear. As composite materials CERANOD® hybrid systems achieve properties in function and endurance, which each single component could never reach.

Thereby not seldom properties are requested, which seemed to be incompatible up to now, e.g. at the same time rough and easy to clean, hydrophilic and bactericide, extremely wear resistant and soft and so on.

With our CERANOD® processes we manage to combine a large number of refined surfaces within a broad spectrum of technologies and materials in order to meet almost any surface technological challenge.

No matter if in mechanical engineering, aerospace technology, offshore technology, medical engineering or many other future technologies.



You with Us. We for You.

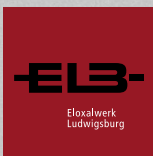


From us you obtain multiple awarded work!

Our company is certified after DIN EN ISO 9001:2008
and was awarded with the Seal of Quality
»One of Germany's Most Innovative Mid Size Enterprises«.

We do not only intend to work for, but rather with you.
It is our major excellence to always focus all our knowledge
and capability on your requirements and at any time
to produce a solution exactly within your scope of work.
Face to face, together.

Welcome to ELB!
For you the door is always open.



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