

Our DOTIZE®-SURFACE for your DENTAL COMPONENTS



Type II Anodizing

DOTIZE®

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Type II Anodizing*

DOTIZE® Implant Surface

Anodizing is an established technique that is used to treat the surfaces of titanium implants and components. It is now also used as the standard surface treatment for osteosynthesis products and for sub-components of joint replacement implants. Because these surface treatments are, among other things, adapted to the requirements of orthopedics and traumatology, they reduce cold welding of osteosynthesis products (e.g. between bone nail and screw), extend fatigue limits and improve corrosion resistance.*

*Literature on request

Description of the Surface

The DOTIZE® anodizing (Type II anodizing) is an electrochemical process with which a defined oxide layer is applied to a metallic surface replacing the thin natural oxide layer on the implant surface. This is achieved through a spark discharge produced on the surface of the implant/part whilst it is immersed in an electrolytic bath. The discharge melts the implant surface and the oxide layer becomes a strong, integral part of the base material reducing the risk of delamination.

Characterization of the Surface

Test criteria	Result
Color	Dark gray to anthracite
Coating thickness (DIN EN ISO 2360) (after glass blasting)	1.1 ± 0.5 µm
Roughness Rz (DIN EN ISO 4288) (DIN EN ISO 3274)	Rz ≤ 3 µm (valid given the corresponding roughness of the base material)
Fatigue strength	Extension in the fatigue limit by approx. 12 %
Corrosion resistance	Increase in corrosion resistance by up to 44 %
Tensile adhesive strength (DIN EN ISO582), (ASTM F 1147)	≥ 22 MPa
Abrasion resistance	Increase in abrasion resistance
Friction coefficient µ	Reduction of the friction coefficient
Biocompatibility (DIN EN ISO 10993-1)	Biocompatible
Irritation/Intracutaneous reactivity (DIN EN ISO 10993-5)	No irritation
Acute systemic toxicity (DIN EN ISO 10993-11)	No acute systemic toxicity
Sensitization (DIN EN ISO 10993-10)	No sensitizing effect

Advantages of the Surface

- Easier removal of the implants after fracture healing due to reduced protein adsorption
- Improved fatigue strength of the implants
- Reduction of the risk of cold welding
- Higher pre-loading of threaded connections is possible
- Highly biocompatible
- No changes in implant dimensions
- Sealing of microcracks and micropores in the raw material