

Our DOTIZE® surface for your dental COMPONENTS



Anodizing type II

DOTIZE®

*DOTIZE®
Anodizing type II*

DOTIZE® implant surface

The anodization is a proven surface treatment method for implants and components made of titanium. It is used, among other things, for osteosynthesis products and for partial components of joint replacement implants. Anodized surfaces can reduce cold welding in osteosynthesis products, improve fatigue resistance and are able to slightly increase the corrosion resistance.*

*Literature on request

Description of the surface

DOTIZE® (anodization type II) is an electrochemical process with which a defined oxide coating is applied to a metallic surface replacing the thin natural oxide layer on the implant surface. This is achieved via a spark discharge produced on the surface of the implant / part while it is immersed in an electrolyte solution. The discharge melts the implant surface and the oxide coating 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 bead blasting)	1.5 +/- 0.5 µm
Roughness R_a (DIN EN ISO 4288) (DIN EN ISO 3274)	$R_a \leq 3 \mu\text{m}$ (valid for the given the corresponding roughness of the base material)
Fatigue strength	Increase in fatigue resistance by approx. 12 %
Corrosion resistance	Increase in corrosion resistance by up to 44 %
Adhesion strength (DIN EN ISO582), (ASTM F 1147)	$\geq 22 \text{ MPa}$
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 irritations
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 the fracture is healed due to reduced protein adsorption
- Improved fatigue strength of the implants
- Reduction of the risk of cold welding
- Higher loading of threaded connections is possible
- Highly biocompatible
- No changes in implant dimensions
- Sealing microcracks and micropores in the raw material

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