

GiganTium[®]

The Elite-Material.



GiganTium[®]

↳ $\geq 1.100 \text{ MPa}$

↳ 100 % Pure titanium 4KV

ONE VISION - BE SMART. BE ICX.

medentis
medical

Discover the ICX Difference: A Completely New Experience

Dear Sir or Madam,

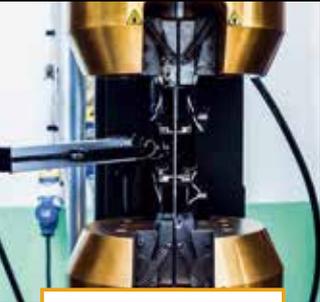
what does our ICX-DIAMOND® implant line offer you?

The ICX Diamond family includes the Premium and Active variants, each available as bone level and transgingival, as well as all Tuber and Zygoma implants – all made exclusively from GiganTium®, of course.



Alexander Scholz
CEO and Founder
medentis medical

**We are now taking our 'best' to the next level –
with our elite material 'GiganTium®'!**



≥ 1.100 MPa

The combination of mechanical superiority and biological optimisation is unique. GiganTium® provides strength and safety, while our hydrophilic, microstructured surface can enable faster osseointegration. This means high primary stability and long-term safety – for practitioners and patients alike.

ICX-DIAMOND® Implants are available in all lengths and diameters

GiganTium®

The Elite-Material.

GiganTium®

- ↳ ≥ 1.100 MPa
- ↳ 100 % Pure titanium
- ↳ Exclusively for ICX-DIAMOND®

Exclusively used for

ICX-DIAMOND®

The world's most powerful ICX!

ICX-DIAMOND[®]

THE ELITE IMPLANT FROM MEDENTIS

LIQUID

No pure titanium is known to us, to surpass the strength of GiganTium[®].

GiganTium[®]
The Elite-Material.

Overview of static load results ICX-DIAMOND^{®A} Implant 3.3 according to standard DIN EN ISO 14801

Test number	^A ICX-DIAMOND [®] Implant 3.3 (Lot: 102129) Art. No: ACM-001-330125 ICX [®] Abutment Art. No: N-007-020402 Titanium Grade 5 (Lot: 2022000486)
Test 01	630 N
Test 02	647 N
Test 03	635 N

The 14801 standard describes the static (breaking load) loading of implants. For this purpose, the implant/abutment specimens are loaded to fracture in a universal testing machine (DynaMess).

Machine type: 2-column testing machine/servopneumatic Manufacturer: Dyna-Mess Prüfsysteme GmbH, 52222 Stolberg Test date ICX-Diamond[®]: 01.03.23 - Name of tester: Evgin Bugdaç - Job title: Dipl.-Ing. - Testing location: 53474 Bad Neuenahr-Ahrweiler-Germany

A: medentis medical/ICX-DIAMOND[®]/GiganTium[®] is a registered trademark and/or trademark of medentis medical GmbH, Walporzheim, GER. data on file.

Titanium Grade	Tensile strength
Pure titanium grade 4 KV all ICX-premium implants ¹⁾	843 MPa
All ^A ICX-DIAMOND [®] implants are made of GiganTium ^{2/3)} GiganTium = pure titanium grade 4KV, with 1,100 MPa.	≥ 1.100 MPa

Tensile strength refers to the maximum mechanical pulling force that can be applied to a sample in a tensile test.

1) Average values of the batches used in 2012 for ICX Premium implants. Data stored in files.

2) ICX-DIAMOND[®] Giga-Titanium values deposited in: medentis specification

3) Definition of Giga-Titanium: Pure Titanium Grade 4KV 1.100 MPa. Sources for mechanical and chemical properties: ISO 5832-2

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ICX-DIAMOND[®] – made from GiganTium[®]!

GiganTium[®]

- ↳ ≥ 1.100 MPa
- ↳ 100 % Pure titanium
- ↳ Exclusively for ICX-DIAMOND[®]

Roxid[®]

- ↳ ca. 1.000 MPa
- ↳ Titanium-zirconium alloy
- ↳ Not 100% titanium

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The world's
most powerful ICX!

ICX-DIAMOND[®]

THE ELITE IMPLANT FROM MEDENTIS

LIQUID

THE PROPERTIES OF ICX-DIAMOND[®]:

- ICX-DIAMOND[®] Implants are made from GiganTium[®].
- GiganTium[®] has a higher tensile strength than standard titanium.
- 100% pure titanium 4KV
- Positive influence on material fatigue
- Desired ICX micro-roughness
- Hydrophilic and micro-structured implant surface



No pure titanium is known to us, to surpass the strength of GiganTium[®].

GiganTium[®]
The Elite-Material.

Switch or give us a call –
we will refer you to surgeons
in your area who work with
ICX-Diamond[®]!

ICX-DIAMOND
in the ICX-Shop!



medentis uses the exceptional strength and purity of GiganTium in its ICX Diamond implant system. Exceptional strength and purity of GiganTium – for superior mechanical stability and safety. But what exactly is behind the term "GiganTium"?

Many implantologists have heard of titanium purity grades, but do not know all the background information. What type of titanium is used in implantology?

In implantology, commercially pure (CP) titanium grades specifically grade II to IV are primarily used. Grade IV work hardening titanium has established itself as the premium standard because it offers the highest strength among the CP titanium grades and its proven biocompatibility.

Cold working and compaction significantly increase its stability compared to classic grade IV. Almost all implant systems available worldwide today are made of grade IV work hardening titanium. Some manufacturers also use alloys, such as alloy of titanium and zirconium, to increase the strength. However, these materials are no longer pure titanium and raise questions about long-term biological compatibility.

The ICX Diamond implant is made of GiganTium. What are the biggest advantages here?

Standard CP Grade IV work hardening titanium has a tensile strength of approx. 700 MPa. Our new material GiganTium achieves not less than 1,100 MPa – around 60 percent more strength than CP Grade IV work hardening ti-

INTERVIEW WITH
Alexander Scholz
CEO and Founder
medentis medical



tanium. This allows us to offer implantologists maximum safety, even with smaller implant diameters, and superior long-term stability for patients. And all this is without alloy additives but is made from 100 percent titanium.

Can you also prove the superior results of the ICX Diamond implant? How is this tested?

Yes, we have carried out static load tests. In these tests, the implants are loaded until they break. The result was very clear: ICX Diamond implants made of GiganTium achieve more than 20 percent higher breaking load values than implants made of Roxolid®.

Roxolid® was previously considered the benchmark in the market at around 1,000 MPa – now, for the first time, we have a pure titanium that exceeds this mark. It must be emphasized here that these are static fracture tests (static strength), not standardized continuous load cycles (fatigue strength)

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according to ISO standards. But even these data speak for themselves.

How does GiganTium achieve this exceptional strength?

We consistently test the incoming titanium raw materials for strength. This reveals a wide spectrum: Some batches are around 680 MPa, which corresponds to classic grade IV titanium. Others reach values of 1,100 MPa or even significantly higher – up to 1,300 or 1,400 MPa. Only these elite batches of 1,100 MPa or higher are used to produce ICX-Diamond. This strict selection process is the basis for GiganTium – stronger than any known titanium, purer than any titanium alloy.

What are the advantages of the ICX Diamond implant through the combination of GiganTium and a hydrophilic and micro-structured surface?

The combination of mechanical superiority and biological optimization is unique. GiganTium provides strength and safety, while our hydrophilic, micro-structured implant-surface enables faster osseointegration.

This means high primary stability and long-term safety – for practitioners and patients alike.

Are you planning to use GiganTium technology in other ICX implant lines?

No – and that's entirely intentional. GiganTium is used exclusively for the Diamond line. The name Diamond stands for exceptional

strength, safety, and precision—and that is exactly how it should remain.

It is important to note that GiganTium is not a new or an untested material. The technology was successfully introduced in 2023 and has since proven itself in thousands of implantations. Around 30% of all implants we deliver are now made of GiganTium. Feedback from practitioners has been consistently positive – both from a mechanical and biological perspective.

Since it is 100% pure titanium, there are no risks from alloy components such as zirconium, aluminum, or vanadium. GiganTium thus offers doctors and patients a maximally safe and proven solution.

The Diamond family made exclusively from GiganTium includes the Premium and Active variants, each available as Bone-Level and Transgingival, as well as all tuber and zygo-ma implants.

Diamond thus remains a clear promise:

All Diamond implants are always made of GiganTium. ←

GiganTium®

The Elite-Material.

