The world of safe ceramic implants

Z-SYSTEMS
ceramic implants
Welcome to the world of safe ceramic implants.

Z-SYSTEMS is the global leader in ceramic implants.

Tens of thousands of successfully placed implants and over 15 years’ experience have brought us significant advances in manufacturing, quality and know-how. We value clinical documentation, and are certified as per ISO 13485.

Z-SYSTEMS products are CE- and FDA-certified.

We obtained the first CE certification for one-piece ceramic implants in 2004. All our ceramic implants are manufactured with our safe Zirkolith® process. In 2007, we were the first ceramic implant manufacturer to meet the requirements to obtain FDA certification. Four years later, we continued this success with our Z5c two-piece ceramic implant.

The Z5m(t) conical ceramic implant with active threads was certified by the FDA in 2015, and successfully introduced around the world. Our two-piece screwed Z5s implant obtained CE certification in 2016. We are the first and only manufacturer of a bone-level implant made of ceramic with platform switching.

Trusted pioneering advances.

Constant innovation, based on solid scientific experimentation, our unique product range and personal advice – your satisfaction is our goal. The road to reliable, safe material and design is a long one. We follow significant quality demands and continue successive developments. Safety without compromise is our highest motto, because we are convinced that only sustainable and safe implants ensure your success.

We are pleased to present you our complete product range on the following pages, and to win you over with our safe ceramic implants.

Your Z-SYSTEMS Team

The benefits of Z-SYSTEMS – ceramic implants at a glance

- Survival rate comparable to that of titanium implants
- Secure osseointegration thanks to the hydrophilic SLM® surface
- Implant and abutment can be prepped
- Higher material strength than titanium
- Less plaque, better gum attachment
- Not electrically conductive, no galvanic elements, no currents
- Sustained aesthetic results
Ceramic implants – The alternative to titanium implants.

Z-SYSTEMS implants consist of a pure zirconium oxide, high-performance ceramic as per ISO 13356, and are superior to titanium implants in many areas.

More natural
Bones and gums integrate better with zirconium oxide ceramics.1

More sustainable
Less plaque accretion than on titanium. This reduces the risk of periimplantitis as well as cardiovascular diseases and strokes.2

More aesthetic
Thanks to the white material, no gray shadows are visible even with thin or receding gums.3

Healthier
Z-SYSTEMS implants are metal-free, biocompatible, conduct neither heat nor electrical energy, and cause no irritation to the immune system.4

Stronger
Ceramic is much stronger than titanium.

More visible
Ceramic implants are opaque to X-rays, and easier to recognize in critical situations.

Z-SYSTEMS is the first name in ceramic implants.

Z-SYSTEMS makes no compromise in quality. Our implants not only demonstrate important advantages as compared to titanium implants, but they also are significantly different from other ceramic implants.

Safe.
Our unique Zirkolith® manufacturing process layers the raw material in many steps, then it is processed and ground to make implants. This process significantly increases breakage- and age-resistance.

Flexible.
Both one- and two-piece Z-SYSTEMS implants can be ground in the mouth. Thus optimized shapes as well as individual adjustments to the gums are possible.

Hydrophilic.
Z-SYSTEMS implants are plasma-sterilized, which is gentle to the material. Thus the surface is hydrophilic. Other ceramic implant producers use lower-cost steam- or ionizing gamma ray sterilization. We stopped using material-stressing steam sterilization in 2009.5

Fast.
The patented surface is sand-blasted and laser-modified with an SLM® process. This trusted process has been used since 2011. This not only roughens the sides of the threads, it also achieves the optimal degree of micro and macro roughness (R3).6

Successful.
The survival rate for Z-SYSTEMS’ Z5 generation of ceramic implants is at >98%, and comparable to leading titanium implants.7

Z-SYSTEMS implant variety at a glance

There are six different types of implants. Z-SYSTEMS offers the optimal solution for every indication. The outer geometry of our one- and two-part implants is identical, except for the Z5m(t) and Z5s in the upper thread area.

### One-piece implant types

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<tr>
<th>Z5m</th>
<th>The trusted implant for a variety of indications</th>
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### Two-piece implant types

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<th>The implant for immediate implantation and soft bone qualities</th>
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<td>Z5c-40-12</td>
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<tr>
<th>Z5s</th>
<th>The revolutionary screwed-in bone-level solution*</th>
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= length in mm

### What makes Z-SYSTEMS' implants distinctive?

All Z-SYSTEMS implants are manufactured using the unique Zirkolith® process, and consist of Y-TZP-A Bio-HP® zirconium oxide. The material fulfills ISO 13356 requirements for surgical implants, and achieves its high stability in several steps, also using a “Hot Isostatic Postcompaction” process. Our process is many times higher than with titanium or other ceramics. Our expensive manufacturing process forms the basis to fill our high quality requirements – and makes Z-SYSTEMS implants the first choice for ceramics.

**Abbreviations:**
- m means monotype
- lc means locator
- lb is lockball
- t for tapered
- c for cemented
- s for screwed

*available from Q3/2017*
The optimal combination of the conical basic form with dynamic, active and self-cutting threads achieves high primary stability even in soft D3 bone.

The abutment can be directly prepped in-situ. Thus one can provide customized, fast and low-cost care. The connection geometries of our structures are filed in the most-available CAD libraries (3D Diagnostix, Carestream, Materialise, Planmeca, Sicat, Vatech).

This unique material makes it possible to prep the shoulder on a custom basis to defined preparation limits.* The shoulder design makes it possible to produce the optimal soft tissue shape for a safe and aesthetic solution.

The conical, self-cutting threads ensure primary stability.

The extraordinarily stable implant-abutment connection plus outstanding break resistance ensure the highest level of safety.

The Z5c implant can be prepped.* Zirkolith® material's high stability makes it possible to prep the implant to defined preparation limits. This unique ability in implantology means a great deal of freedom for the user for individual adjustment to existing anatomical circumstances.

The secure form-fit of the abutment is achieved with its internal cone connection. The visible gap is by design, necessary for clean cementing.

Straight and angled abutments in different abutment and gingival heights are available for aesthetically superior restorations.

Z5s implants have a conical and rotationally-secure internal connection with a hexagonal form. This enables easy, safe and optimal positioning of the abutment.

A pre-mounted clamping wedge is located inside the implant and holds the screw which is affixed to the abutment. Thus there is practically no risk of screw loosening.

All Z-SYSTEMS implants are provided with a hydrophilic surface! The laser-structured SLM® surface has been shown to promote osseointegration due to its demonstrable increased roughness. Very good long-term results with over 98% survival rates are documented. All implant geometries are filed in 3D planning software programs.

* Z-SYSTEMS has had the safety of manually-prepped Z-SYSTEMS implants tested by the renowned Fraunhofer Institute for Material Engineering. The results are clear: no significant impairment was found in the prepped implants. Manually prepped implants do not have a higher risk of breakage.

Similarities and special items

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2. The abutment can be directly prepped in-situ. Thus one can provide customized, fast and low-cost care. The connection geometries of our structures are filed in the most-available CAD libraries (3D Diagnostix, Carestream, Materialise, Planmeca, Sicat, Vatech).

3. This unique material makes it possible to prep the shoulder on a custom basis to defined preparation limits.* The shoulder design makes it possible to produce the optimal soft tissue shape for a safe and aesthetic solution.

4. The conical, self-cutting threads ensure primary stability.

5. The extraordinarily stable implant-abutment connection plus outstanding break resistance ensure the highest level of safety.

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The surgical cassette contains all of the instruments needed for implants, and is constructed in a user-friendly manner. The rotating instruments are sorted to correspond to the treatment course, and completely labeled with color-coding. The instruments as well as the space for them are provided with item numbers in order to avoid confusion.

**Material characteristics**

All instruments which come into direct contact with the operating field are made of zirconium oxide. The cutting instruments consist of high-strength ATZ high-performance ceramics. This zirconium oxide, which is reinforced with aluminum oxide, is ideal for manufacturing drills and thread cutters. The ATZ drills cut in an excellent manner, and have little wear.

**Insertion Instruments**

- ZT-MD Handpiece adapter (for Tap)
- ZT-RA10 Handpiece adapter 10 mm
- ZT-RA20 Handpiece adapter 20 mm
- Z5m-HA12lb Ratchet adapter 12 mm
- Z5m-RA16lb Ratchet adapter 16 mm
- Z5m-RA24lb Ratchet adapter 24 mm

**Measuring**

- HA12 25 mm handpiece adapter
- RACB 25 mm handpiece adapter
- RA24 25 mm handpiece adapter

**Ratchet**

- Z5s-RA16 Screwdriver 25 mm
- Z5s-RA16-1 Long screwdriver 25 mm
- Z5s-RA12 handpiece adapter 25 mm
- Z5s-RA16 handpiece adapter 25 mm

**The meaning of the colors:**

- yellow = Ø 3.6 mm
- red = Ø 4 mm
- green = Ø 5 mm
- purple = Z5m(t)
The right choice at the right place

Optimal planning is important for long-term successful restorations. The implant dimensions given here should be seen as minimum values.

| Implant size | Thread diameter | Shoulder diameter | Minimal over vestibular (crestal bone level) | Minimal mesio-distal (interarch space) | Optimal indication for tooth planning | Further possible tooth planning indications | Bonding | Bridging | Bridge | Restoration
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<td>43, 44, 45, 46, 47</td>
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* recommended | (+) not recommended | – not possible

Z-SYSTEMS warranty

Z-SYSTEMS is convinced of its outstanding product quality. Therefore, we provide a life-long warranty on the implants, as well as a 10-year warranty on the ceramic abutments (Z5m/Z5s). The warranty includes the replacement of Z-SYSTEMS products and no additional costs, especially for any treatment required. The Z-SYSTEMS warranty and general business terms apply.

General Safety and Warnings

The descriptions in this brochure are not sufficient to allow immediate use of Z-SYSTEMS’ implant systems. It is recommended that you are instructed by an experienced operator; one must study the manual. Not all products are available in all countries.

Patient material

We are glad to support you with informational material for your patients. Please contact us if you need implant passports, patient brochures, 3D models or other helpful material.

Surgical procedure

High-quality ceramic instruments are used to insert Z-SYSTEMS implants. The implant bed preparation requires a proven and standardized procedure, and is kept very slender. The drill is used in an increasing diameter series. The use of thread cutters is recommended, depending upon bone quality.

The drill protocol at a glance

<table>
<thead>
<tr>
<th>m/mic/mlb/c/s</th>
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<th>Optional</th>
<th>Standard</th>
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<td>TD285</td>
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<tr>
<td></td>
<td>800</td>
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<td>m(t)</td>
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<td>D0-04</td>
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Counter-sinks are available for the m, mic and mlb implants.

The drilling protocol for D1 and D2 bones can be found in the manual.

The following points are to be noted when preparing the implant bed:

- The length of the implant is calculated from the crestal bone level to the apical lower end
- The apical overhang of the drill tip is up to 1.3 mm

The right choice at the right place
## General overview

<table>
<thead>
<tr>
<th>Implant</th>
<th>Abutment</th>
<th>Healing cap</th>
<th>Gingiva former</th>
<th>Impression caps</th>
<th>Laboratory analogue</th>
<th>Matrix</th>
<th>Instruments</th>
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<tbody>
<tr>
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**Please order directly with Valoc™ (www.valoc.ch)**

***Their application requires previous experience with manual insertion instruments.***