VITA IMPLANT SOLUTIONS

The Concept

VITA shade determination  VITA shade communication  VITA shade reproduction  VITA shade control

Date of issue: 10.18

VITA – perfect match.
CONCEPT AND BENEFITS

VITA IMPLANT SOLUTIONS are CAD/CAM blanks for time and cost-efficient fabrication of implant crowns. More information on the concept and benefits can be found on the following pages.
Fabricate highly precise and reliable implant restorations with VITA IMPLANT SOLUTIONS blanks!
VITA IMPLANT SOLUTIONS (IS) are blanks with an integrated interface to an adhesive/titanium base (e.g., TiBase).

The blanks are used for CAD/CAM fabrication of implant-supported restorations.

They are available in two variations:
- VITA ENAMIC IS
- VITA CAD-Temp IS

**What?**
- VITA IMPLANT SOLUTIONS (IS) are blanks with an integrated interface to an adhesive/titanium base (e.g., TiBase)

**What for?**
- The blanks are used for CAD/CAM fabrication of implant-supported restorations

**With what?**
They are available in two variations:
- VITA ENAMIC IS
- VITA CAD-Temp IS
VITA ENAMIC® IS

• VITA ENAMIC is a hybrid ceramic with material properties to allow absorption of masticatory forces for final restorations

VITA CAD-Temp® IS

• VITA CAD-Temp is a composite blank for temporary restorations
BENEFITS
VITA ENAMIC® IS HYBRID CERAMIC

Reliable

- Fabricating implant-supported restorations using a high-load capacity hybrid ceramic with absorption of masticatory forces

High precision

- Produce accurate and precise superstructures, thanks to a hybrid material with integrated elasticity

Cost-effective

- Cost-effective reconstruction, thanks to time-saving CAM fabrication and efficient finishing by polishing without any firing process
**Efficient**
- Efficient temporary fabrication through a fully digital process — from the CAD construction through the CAM production

**Simple**
- Simple design of the emergence profile, thanks to the manifold options for the virtual construction of the temporary restoration

**Natural**
- Natural shade effect thanks, to impressive light optical properties
RESTORATIVE CONCEPT

Step 1
Implant placement

What?
VITA IMPLANT SOLUTIONS (IS)
• compatible with systems of the following providers via the TiBase interface:
  • alphatec
  • BIOMET 3i
  • CAMLOG
  • Dentsply Sirona
  • MEDENTIKA
  • Nobel Biocare
  • Straumann
  • ... and many others.

Step 2
Temporary superstructure

What?
CAD/CAM fabrication
• temporary abutment crown (AC)

What for?
• for healing period/restoring the masticatory function
• for shaping/optimizing the emergence profile

With what?
VITA CAD-Temp IS
Step 3
Final superstructure

What?

**CAD/CAM fabrication**
- single-element solution → final abutment crown (AC)/IS-16 geometry
- two-element solution → final mesostructure (MS)/IS-14 geometry

What for?

▷ for posterior superstructure: AC type
▷ for anterior superstructure: MS type + crown

With what?

**VITA ENAMIC® IS**
CLINICAL EXAMPLES

VITA IMPLANT SOLUTIONS blanks have proven their reliability in the clinical use. Clinical case documentation can be found on the following pages.
Proven CAD/CAM blanks for durable, implant-supported restorations.
VITA ENAMIC® IS IN CLINICAL USE

CASE STUDY 1:

1. Implant placement, tooth 25, 26
2. Placement of Scanbody
3. Digital planning/design

Photo source: PD Dr. Andreas Bindl, Zürich, Switzerland

CASE STUDY 2:

1. Implant placement, tooth 16
2. Placement of Scanbody
3. Digital planning/design

Photo source: Dentist Peter Neumann, Berlin, Germany
4. Dental technical steps (exemplary)

- Reworking
- Polishing
- Applying composite
- Bonding to the base

5. Seating VITA ENAMIC IS

6. Result after the healing phase
FACTS AND EVIDENCE

Numerous test series confirm the special benefits of VITA ENAMIC. Key facts and evidence can be found on the following pages.
VITA IMPLANT SOLUTIONS: A proven, reliable solution for implant-supported restorations!
1. High resilience as the material can absorb masticatory forces!

**VITA ENAMIC**
- enables reconstructions with excellent resilience, since the material features an integrated "buffer function"
- is able to absorb 70 percent of the forces in the test, in comparison to the very rigid zirconia

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**Absorption of masticatory forces compared to zirconia (ZrO₂)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Absorption [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid ceramic</td>
<td>71.20%</td>
</tr>
<tr>
<td>VITA ENAMIC</td>
<td></td>
</tr>
<tr>
<td>Gold alloy</td>
<td>46.28%</td>
</tr>
<tr>
<td>Glass ceramic</td>
<td>24.51%</td>
</tr>
</tbody>
</table>

Source: University of Genoa, Dr. Maria Monini et al., Genoa, Italy; Messungen zur Kraftübertragung auf den simulierten periimplantaren Knochen mittels monolithischen Kronen aus o. g. Materialien auf einem stilisierten Implantatabutment, Report 01/15, [1], see back of brochure.
2. Hybrid ceramics can better distribute acting masticatory forces!

**Force-path diagram**

Source: Internal study by VITA R&D; Kraft-Weg-Diagramm für untersuchte dentale Restaurationsmaterialien, Report 11/13 [2], see back of brochure.

**VITA ENAMIC**
- can distribute masticatory forces comparatively well and can be expected to minimize the risks of punctual overloading
- in testing, shows that simulated occlusal forces are distributed over a relatively large contact surface
SEVEN REASONS FOR HIGH RELIABILITY

3. High resilience due to the ceramic-polymer structure!

VITA ENAMIC shows a high load capacity in fracture load tests with implant-supported crown reconstructions, as the material has a dual ceramic-polymer network structure.

On average, the VITA ENAMIC IS crowns achieved a breaking load level of 926 N, which is significantly above the mean maximum masticatory force (490 N).

Source: Internal study. VITA R&D, Bruchlast VITA ENAMIC IS Kronen auf L-TiBase Klebebasen und Straumann Bone Level Implantatsystem. Report 10/14 [2], see back of brochure.

4. Material allows the expectation of good, long-term stability!

Dynamic fracture load of implant crowns made of VITA ENAMIC IS

![Bar chart showing dynamic fracture load](chart.png)

- **VITA ENAMIC IS L**
- Approx. level of permanent loading of ZrO₂ abutments, according to literature sources 1-3

Source: Internal study: VITA R&D, Dynamische Bruchlast VITA ENAMIC IS-Kronen auf L-TiBase-Klebebasen und Straumann Bone Level-Implantatsystem, Report 10/14 [2], see back of brochure.

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*Note: Depending on the test setup, number of cycles and type of implant, test results vary and can only be compared to one another, to a limited extent.*


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**VITA ENAMIC**
- Allows good, long-term clinical stability and reaches a steady-state level of 648 N in two million cycles (100% survival rate)
- References for dynamic load tests indicate a level of permanent loading of approx. 400 N for zirconia abutments on implants.*
5. Good reliability, thanks to damage-tolerant material structure!

VITA ENAMIC: material with integrated "crack-stop function"

VITA ENAMIC • shows an excellent damage-tolerance in tests, as the polymer network can stop the advancement of cracks • reveals plastic deformation after prior damage in testing, whereas traditional ceramics reveal noticeable cracks

Source: Internal study: VITA R&D, Analyse des Querschnitts der Bruchflächen o. g. Materialproben nach Vorschädigung mit einer Wolframcarbidkugel, Report 11/13 [2], see back of brochure.
6. High wear-resistance, thanks to a solid ceramic network!

VITA ENAMIC
- shows excellent abrasion stability in tests for reliable function, thanks to a solid ceramic network
- achieved very good values in wear testing that are comparable to proven dental glass ceramics

Source: University of Regensburg, Faculty of Medicine, Polyclinic for Dental Prosthetics, Prof. Martin Rosentritt, Technical and Scientific Documentation. VITA ENAMIC, VITA Zahnfabrik, Bad Säckingen, Germany, Report 05/11 [3], see back of brochure.
In the context of clinical trials, implant-supported crown restorations made of VITA ENAMIC showed good resistance (survival rate: 98.7%; max. observation period: 45.6 months).

A total of 60 VITA ENAMIC implant crowns were inserted and observed. The average wearing period of the implant crowns in this study was 23.1 months (as of: 11.2014).

Source: Multi-center clinical observational study; VITA Application Technology and Product Management in cooperation with pilot users (= 11 practicing dentists, Germany/Austria/Switzerland); Report 11/14, [4], see back of brochure.
THREE REASONS FOR HIGH COST-EFFECTIVENESS

1. Time-saving production of implant crowns in just a few minutes!

1. CAM fabrication:
   approx. 10 minutes

2. Reworking:
   approx. 2 minutes

3. Polishing:
   approx. 5 – 7 minutes

VITA ENAMIC
• allows the production of superstructures in a few minutes,
  as they can be directly integrated after the CAM process and polishing
• reveals extremely fast CAM machinability in the test,
  thanks to high elasticity and perfectly matched milling strategies
THREE REASONS FOR HIGH COST-EFFECTIVENESS

2. Precise results for exact marginal fit, thanks to edge stability!

VITA ENAMIC
• enables delicate and precise marginal areas for an exact marginal fit, thanks to high edge stability
• produces high marginal precision in testing for objects with thinning marginal areas

Source: Internal study of VITA R&D, Untersuchung von standardisierten Dreiecksformkörpern (30° Keil, Aufsicht) aus o.g. Materialproben mittels REM nach CAM-Fertigung mit Sirona MC XL-Schleifeinheit, 200-fache Vergrößerung, Report 05/10 [2], see back of brochure.
3. Easy to use for screwed reconstructions

VITA ENAMIC
- allows easy access to the screw channel for the VITA ENAMIC IS blanks via the integrated interface (e.g., in case of screw loosening)
- With composites, the screw channel is again rapidly, easily and reliably closed
VITA ENAMIC

• has excellent light-optical properties as a tooth-shaded hybrid ceramic
• allows practices and laboratories to produce very esthetic superstructures

TWO REASONS FOR NUMEROUS ESTHETIC POSSIBILITIES

1. Tooth-shaded material with the best photo-optical properties

Non-colored zirconia  versus  Tooth-shaded hybrid ceramic
2. A multitude of options, due to efficient characterization

VITA ENAMIC
- can be efficiently characterized with light-curing stains – for natural and esthetic restorations
SYSTEM AND COMPONENTS

The VITA IMPLANT SOLUTIONS restorative concept comprises special blanks and components. You can find an overview in this publication.
Create restorations simply, reliably and efficiently with the components of VITA IMPLANT SOLUTIONS!
VARIANTS, GEOMETRIES, TRANSLUCENCY LEVELS

VITA CAD-Temp® IS
For temporary superstructures

VITA ENAMIC® IS
For final superstructures

Translucency
Geometry
Chroma

• Translucent T
• High Translucent HT

Bloc:
• IS-16

Chroma

• monochromatic

*) The IS-14 geometry is available in T, and the IS-16 geometry is available in HT.

Complete overview of VITA IMPLANT SOLUTIONS variations.
AVAILABLE SHADES

Translucency levels

### VITA SYSTEM 3D-MASTER® shade spectrum

<table>
<thead>
<tr>
<th>0M1</th>
<th>1M1</th>
<th>1M2</th>
<th>2M1</th>
<th>2M2</th>
<th>2M3</th>
<th>3M1</th>
<th>3M2</th>
<th>3M3</th>
<th>4M2</th>
</tr>
</thead>
</table>

| High Translucent | Translucent |

Available shades:

- **VITA ENAMIC® IS**
- **VITA CAD-Temp® IS**

### AVAILABLE GEOMETRIES

**VITA ENAMIC® IS**

- **IS-14**: 18 x 14 x 12 mm (for final mesostructures)
- **IS-16**: 18 x 16 x 18 mm (for final abutment crowns)

**VITA CAD-Temp® IS**

- **IS-16**: 18 x 16 x 18 mm (for temporary abutment crowns)

Note: with an integrated S- or L-interface for each geometry
SYSTEM COMPATIBILITY

**CAD/CAM systems?**
VITA offers VITA IMPLANT SOLUTIONS blanks with a specific holder system for the CAD/CAM system:

- CEREC/inLab (Dentsply Sirona) starting with software version 4.4 (CEREC) or software version 15.0 (inLab)

**Implant systems?**
VITA IMPLANT SOLUTIONS are compatible via the integrated interface for the adhesive/titanium base with implant systems of the manufacturers listed below (Issued on: April 3, 2018):

- alphatech
- BioHorizons
- BIOMET 3I
- CAMLOG
- Dentsply Sirona
- MEDENTiKA
- Nobel Biocare
- Straumann
- Thommen Medical
- OSSTEM
- Zimmer

At www.vita-zahnfabrik.com/VITA_ENAMIC_IS#titan_compatibility or www.vita-zahnfabrik.com/VITA_CADTemp_IS#titan_compatibility, you can find the current country-specific lists of the titanium bases approved for VITA IMPLANT SOLUTIONS blanks.

AVAILABLE SYSTEM COMPONENTS

Characterization with VITA ENAMIC STAINS

VITA ENAMIC polishing instruments
IDEAL SOLUTIONS IN THE PROCESS

Shade determination

- For digital shade determination, use the VITA Easyshade V, and for visual shade determination the VITA Linearguide 3D-MASTER or VITA classical A1–D4, for example.

CAD/CAM fabrication

- For CAD/CAM fabrication of superstructures, VITA offers composite and hybrid ceramic blanks – simply select the best material solution for your individual requirements.

Shade modification*

- Use VITA ENAMIC STAINS for the hybrid ceramic and VITA VM LC flow for individualization.

Polishing

- Ideally, for VITA hybrid ceramics, the VITA ENAMIC Polishing Sets should be used.

Luting

- When bonding restorations of hybrid ceramic to TiBase, use a bonding system recommended by VITA.

*Note: The feldspar and hybrid ceramic materials can be seated directly after milling and polishing. Firing is not carried out.

Note: The VITA product solutions mentioned above are registered trademarks of VITA Zahnfabrik.
WE ARE HAPPY TO HELP

More information about the products and processing is also available at www.vita-zahnfabrik.com

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VITA CAD/CAM MATERIALS – for ideal solutions. Proven a million times over.

Ideal solutions for temporary restorations/auxiliaries

Ideal solutions for single-tooth restorations

Ideal solutions for temporary constructions

Ideal solutions for meso-structures

Ideal solutions for abutment crowns

Ideal solutions for implant-supported restorations

VITA IMPLANT SOLUTIONS (IS) are blanks comprised of hybrid ceramic or composite for the CAD/CAM fabrication of implant-supported dental restorations. They feature an integrated interface for an adhesive/titanium base (e.g., TiBase).
References

1. Menini M.
   Investigator: Dr. Maria Menini, Department for fixed and implant-prosthetic restorations, University of Genoa, Italy

2. Internal studies, VITA R&D:
   VITA Zahnfabrik H. Rauter GmbH & Co. KG
   Ressort Forschung und Entwicklung
   Spitalgasse 3, 79713 Bad Säckingen, Germany
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   Prof. Dr. Dr. Jens Fischer, Ressortleiter F&E, VITA Zahnfabrik
   As of: 07.16
   For detailed test data, see Technical and scientific documentation for VITA ENAMIC; Download via www.vita-zahnfabrik.com/cadcam

3. Rosentritt M.
   Pin-on-block wear test of different dental materials.
   Report Number: 133. Author: Priv.-Doz. Dr.-Ing. Martin Rosentritt, Head of Research Division, University Clinic, Regensburg, Polyclinic for Dental Prosthetics Prothetik, Regensburg, Germany

4. Clinical application study:
   VITA Anwendungstechnik und Produktmanagement:
   VITA Zahnfabrik H. Rauter GmbH & Co. KG
   Ressort Vertrieb
   Spitalgasse 3, 79713 Bad Säckingen
   Claus Pukropp, Head of Technical Marketing, Bad Säckingen
   Andreas Buchheimer, Head of Application Technology, Bad Säckingen; Date of issue: 11.14

More information about VITA IMPLANT SOLUTIONS is available at www.vita-zahnfabrik.com/cadcam

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