

# 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.

**VITA**

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## **CONCEPT AND BENEFITS**

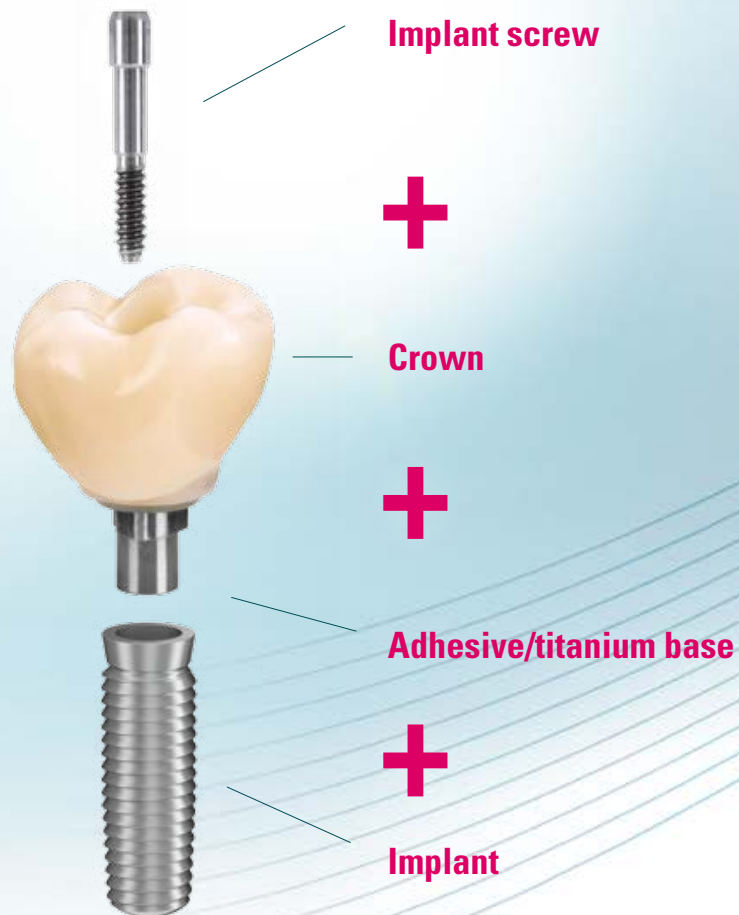
VITA IMPLANT SOLUTIONS are CAD/CAM blanks for time and cost-efficient fabrication of implant crowns. More information on the concept and benefits can be found on the following pages.

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*Fabricate highly precise and reliable implant restorations with VITA IMPLANT SOLUTIONS blanks!*

## THE MATERIAL SYSTEM FOR IMPLANT-SUPPORTED RESTORATIONS



### What?

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

### What for?

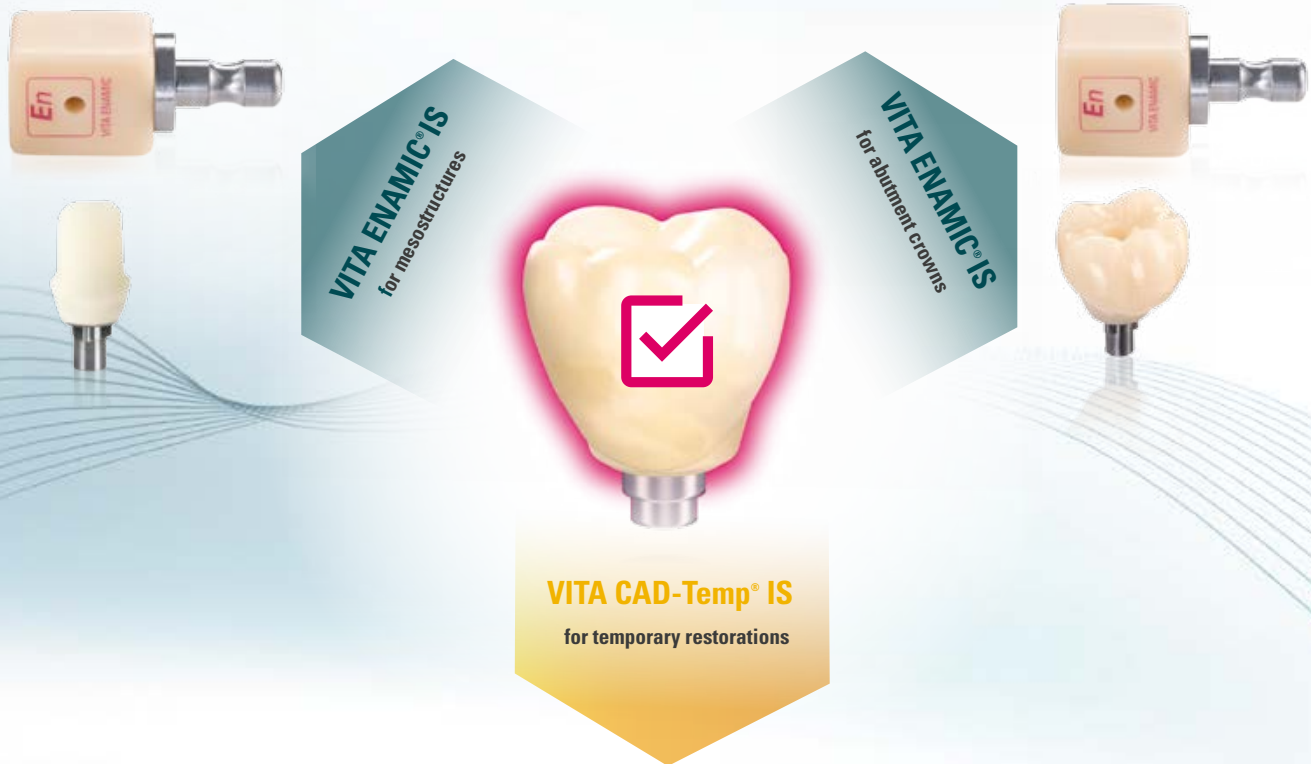
- The blanks are used for CAD/CAM fabrication of implant-supported restorations

### With what?

They are available in two variations:

- VITA ENAMIC IS
- VITA CAD-Temp IS

# BLANKS FOR TEMPORARY AND FINAL RESTORATIONS



## VITA ENAMIC<sup>®</sup> IS

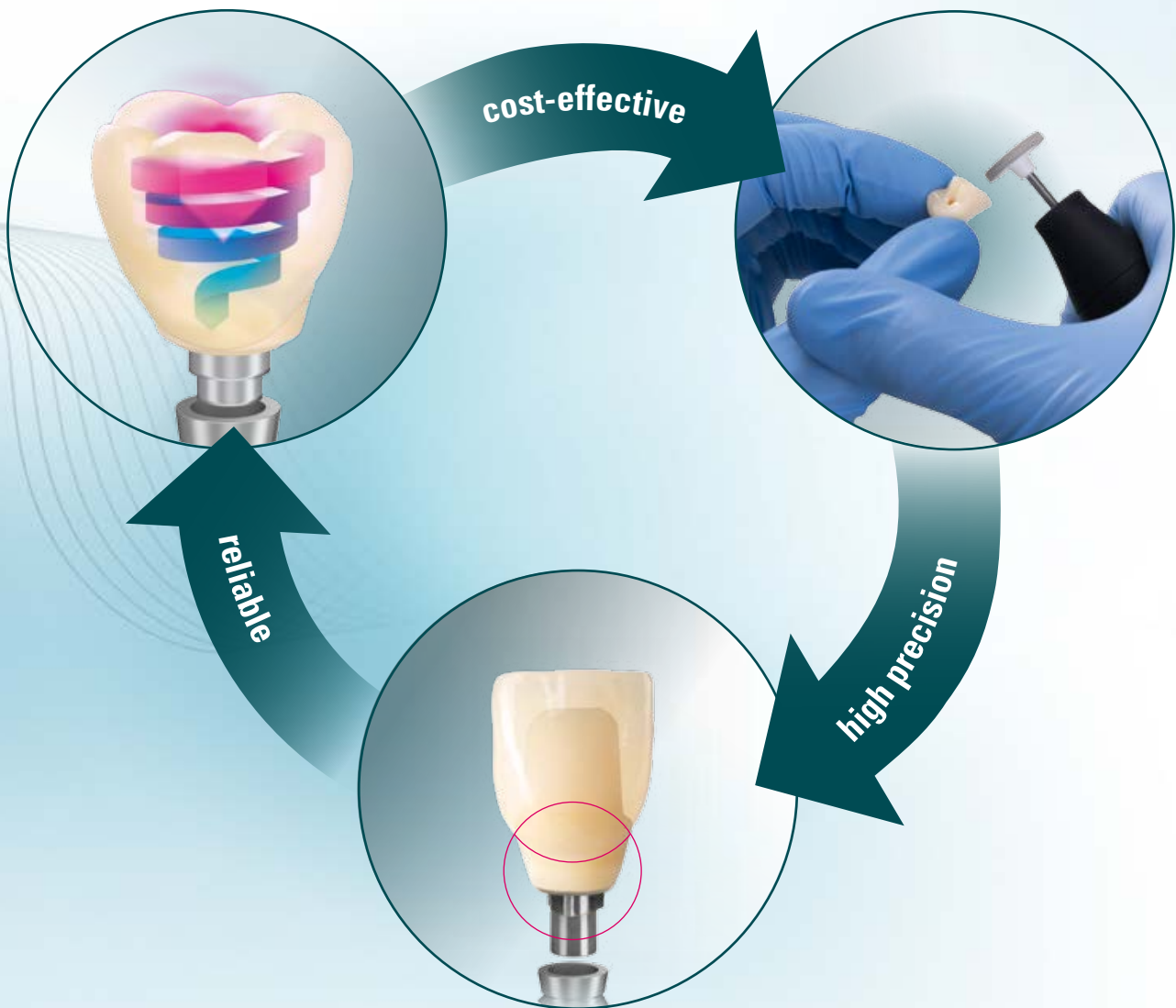
- VITA ENAMIC is a hybrid ceramic with material properties to allow absorption of masticatory forces for final restorations

## VITA CAD-Temp<sup>®</sup> 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**

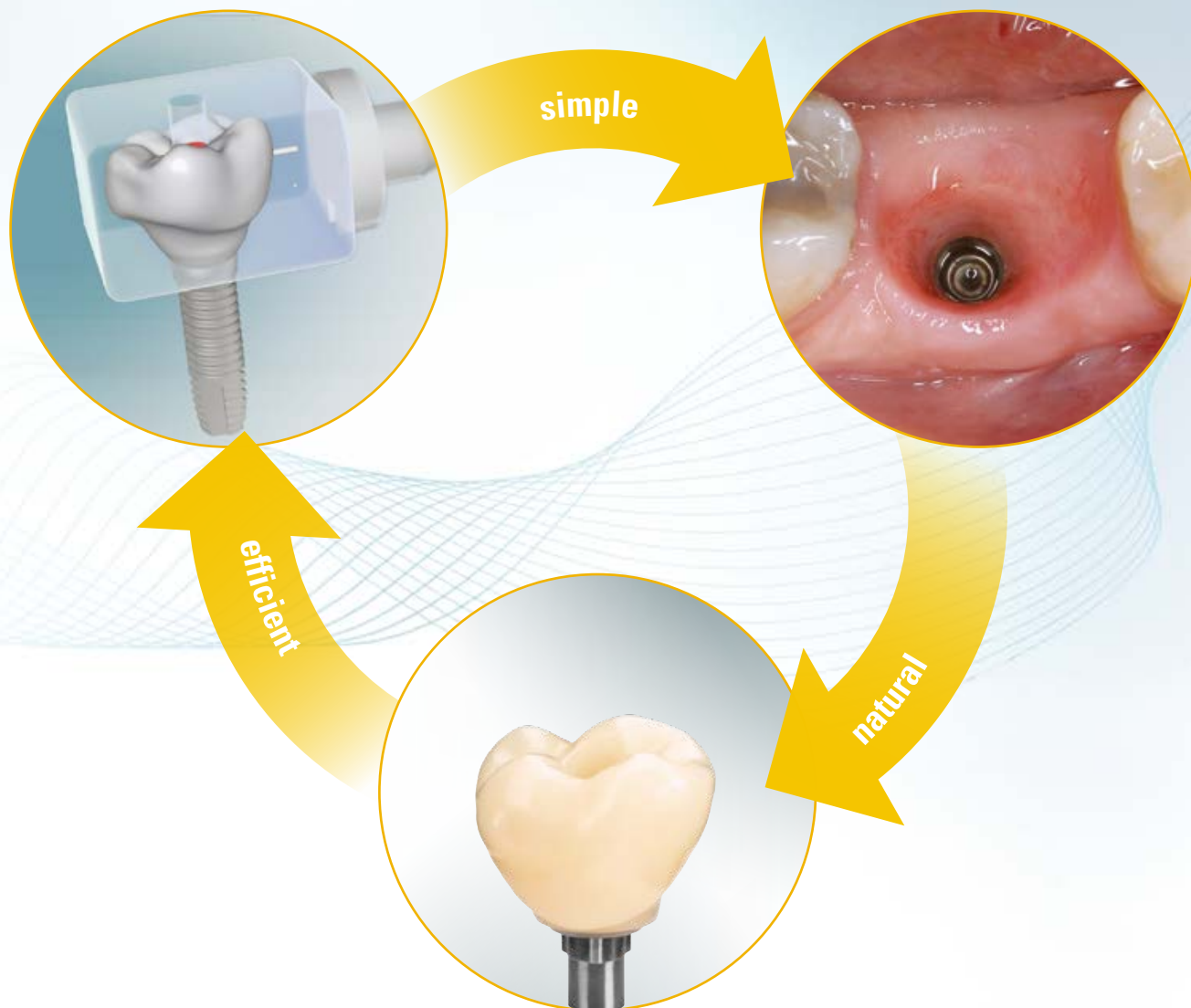
- Produce accurate and precise superstructures, thanks to a hybrid material with integrated elasticity

**Cost-effective**

- Cost-effective reconstruction, thanks to time-saving CAM fabrication and efficient finishing by polishing without any firing process

## BENEFITS

### VITA CAD-Temp® IS COMPOSITE



#### 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

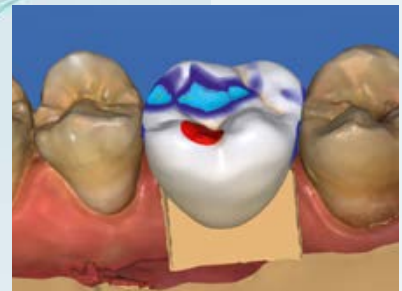
## CASE STUDY 2:



1. Implant placement, tooth 16



2. Placement of Scanbody



3. Digital planning/design

Photo source: Dentist Peter Neumann, Berlin, Germany

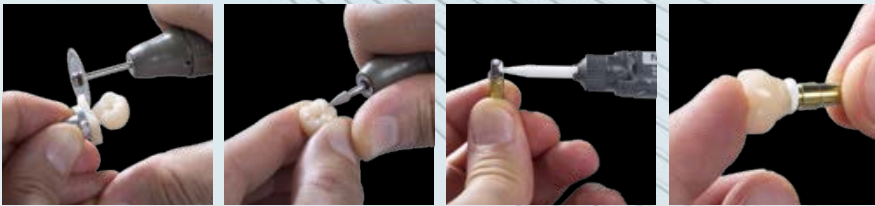


5. Seating VITA ENAMIC IS



6. Result after the healing phase

4. Dental technical steps (exemplary)



Reworking

Polishing

Applying composite

Bonding to the base



5. VITA ENAMIC IS crown



6. Result after the healing phase



A woman with blonde hair tied back in a ponytail, wearing a light blue lab coat, is looking through a white and black microscope. She is smiling slightly. The background is a plain, light-colored wall. The image is partially overlaid with a white rectangular box containing text and decorative green lines at the bottom.

## **FACTS AND EVIDENCE**

Numerous test series confirm the special benefits of VITA ENAMIC. Key facts and evidence can be found on the following pages.

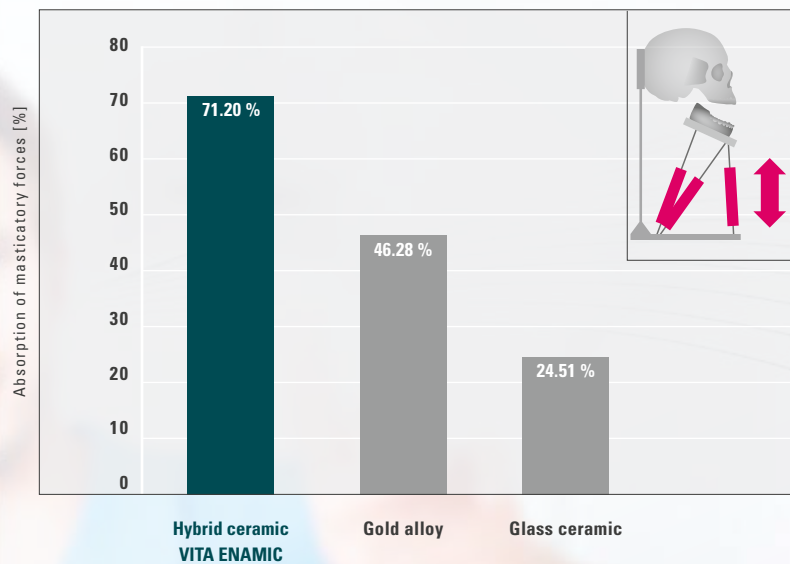


**VITA IMPLANT SOLUTIONS:**  
*A proven, reliable solution for  
implant-supported restorations!*

## SEVEN REASONS FOR HIGH RELIABILITY

### 1. High resilience as the material can absorb masticatory forces!

Absorption of masticatory forces compared to zirconia ( $ZrO_2$ )



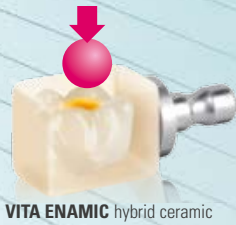
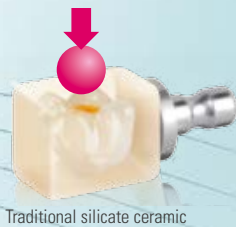
Source: University of Genoa, Dr. Maria Menini et al., Genoa, Italy; Messungen zur Kraftübertragung auf den simulierten periimplantären Knochen mittels monolithischen Kronen aus o. g. Materialien auf einem stilisierten Implantatabutment, Report 01/15, [1], see back of brochure.

#### VITA ENAMIC

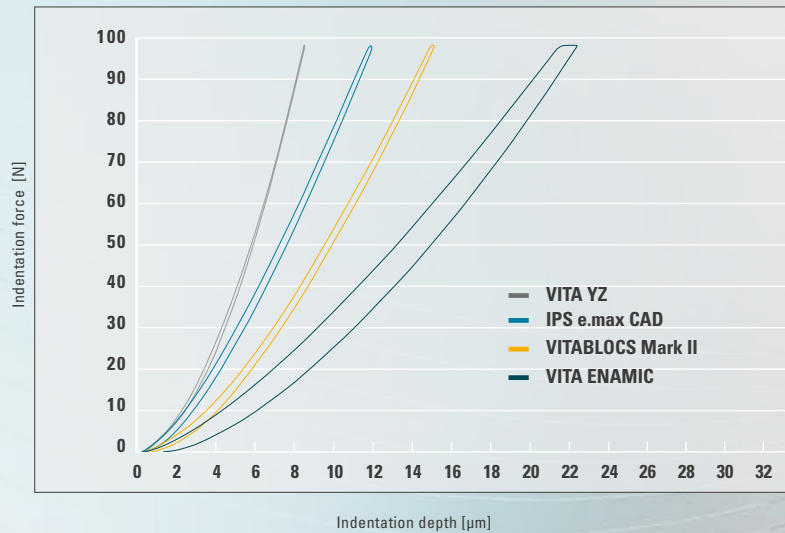
- enables reconstructions with excellent resilience, since the material features an integrated "buffer function"
- is able to absorb 70 percent of the forces in the test, in comparison to the very rigid zirconia



## 2. Hybrid ceramics can better distribute acting masticatory forces!



Force-path diagram



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

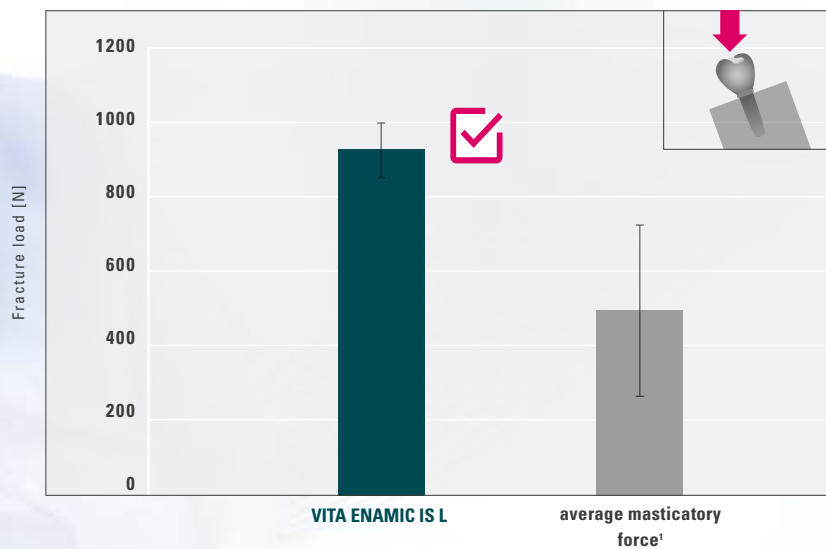
### VITA ENAMIC

- 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!

Static fracture load of implant crowns made of VITA ENAMIC IS



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.

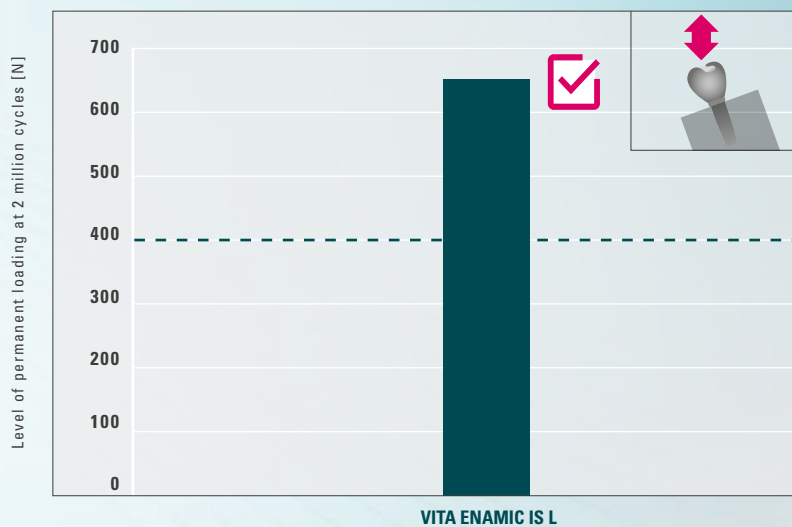
#### VITA ENAMIC

- 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)

<sup>1</sup> Körber K, Ludwig K (1983). Maximale Kaukraft als Berechnungsfaktor zahntechnischer Konstruktionen. Dent-Labor XXXI, volume 1/83: 55-60.

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

### Dynamic fracture load of implant crowns made of VITA ENAMIC IS



--- approx. level of permanent loading of ZrO<sub>2</sub> abutments, according to literature sources<sup>1-3</sup>

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.

\* 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.

<sup>1</sup>Gehrke et al.; Zirconium Implant Abutments: Fracture Strength and Influence of Cyclic Loading on Retaining-Screw Loosening; Quintessence Int. 2006 Jan; 37(1):19-26.

<sup>2</sup>Mitsias et al.; Reliability and Fatigue Damage Modes of Zirconia and Titanium Abutments; Int J Prosthodont. 2010 Jan-Feb; 23(1):56-9.

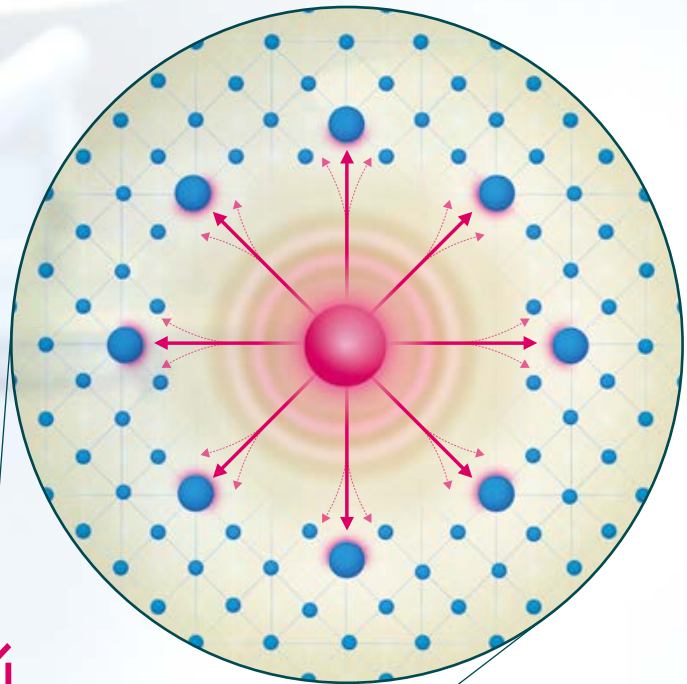
<sup>3</sup>Jiménez-Melendo et al.; Mechanical Behavior of Single-Layer Ceramized Zirconia Abutments for Dental Implant Prosthetic Rehabilitation; J Clin Exp Dent. 2014 Dec 1;6(5):e485-90.

### VITA ENAMIC

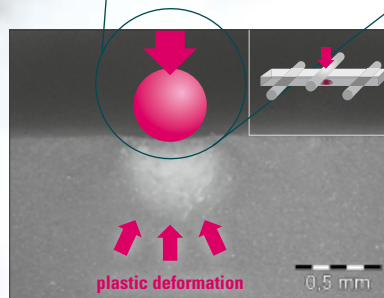
- allows good, long-term clinical stability and reaches a steady-state level of 648 N in two million cycles (100% survival rate)
- References for dynamic load tests indicate a level of permanent loading of approx. 400 N for zirconia abutments on implants.\*

## SEVEN REASONS FOR HIGH RELIABILITY

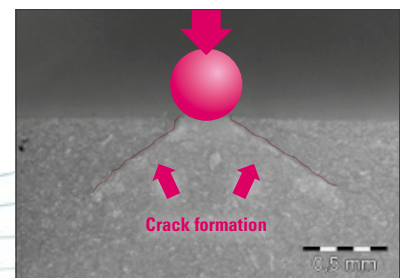
### 5. Good reliability, thanks to damage-tolerant material structure!



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



VITA ENAMIC hybrid ceramic



Traditional silicate ceramic

Source: Internal study: VITA R&D; Analyse des Querschnitts der Bruchflächen o. g. Materialproben nach Vorschädigung mit einer Wolframcarbidgeugel, Report 11/13 [2], see back of brochure.

#### 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

## 6. High wear-resistance, thanks to a solid ceramic network!



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.

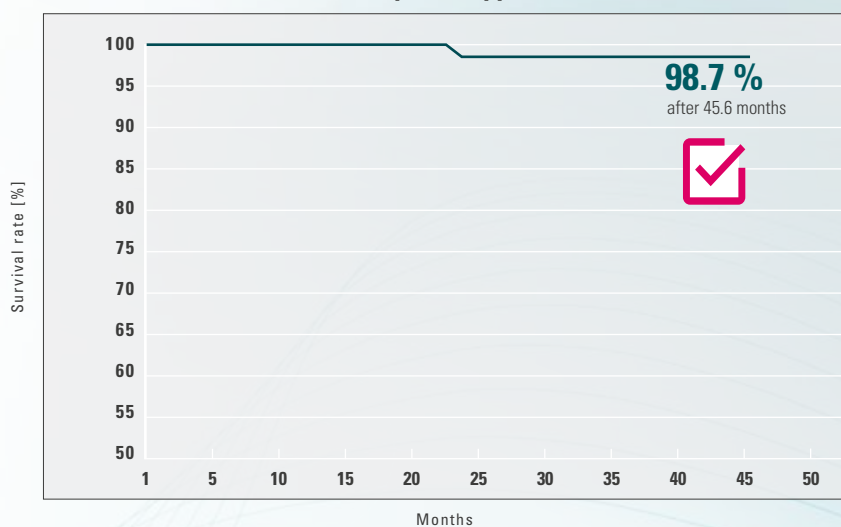
### VITA ENAMIC

- 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

## SEVEN REASONS FOR HIGH RELIABILITY

### 7. Clinically proven material for good reliability!

Survival rate of VITA ENAMIC implant-supported crowns



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.

#### VITA ENAMIC

- 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).

## THREE REASONS FOR HIGH COST-EFFECTIVENESS

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



Easy access



Simple sealing



VITA ENAMIC IS: Simple<sup>2</sup>

#### 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

## TWO REASONS FOR NUMEROUS ESTHETIC POSSIBILITIES

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

Non-colored zirconia



Tooth-shaded hybrid ceramic



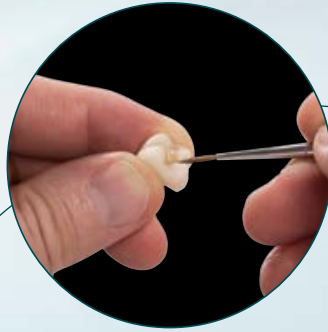
versus

#### VITA ENAMIC

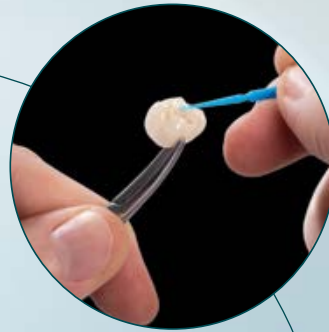
- has excellent light-optical properties as a tooth-shaded hybrid ceramic
- allows practices and laboratories to produce very esthetic superstructures

## 2. A multitude of options, due to efficient characterization

1. Staining



2. Glazing



### 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!

### SYSTEMKOMPONENTEN

Charakterisierung  
mit VITA ENAMIC<sup>®</sup> Status



Individualisierung  
mit VITA VM LC flow

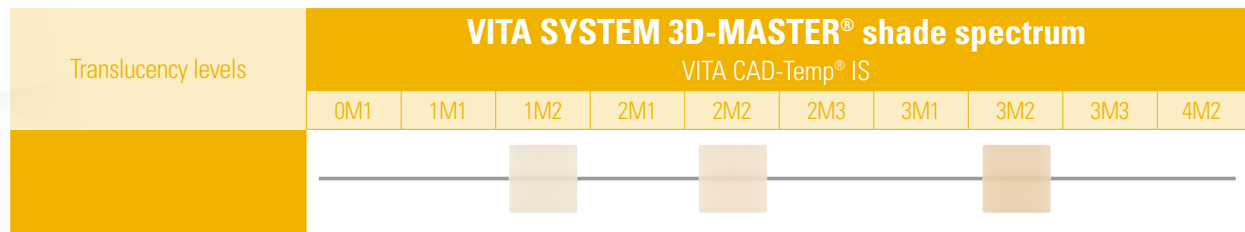
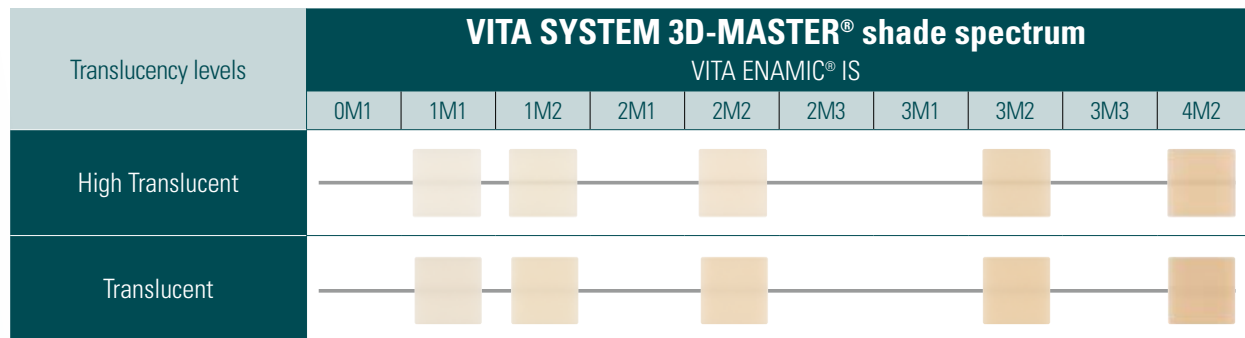
VITA ENAM<sup>®</sup>  
Polierinstr.

## VARIANTS, GEOMETRIES, TRANSLUCENCY LEVELS



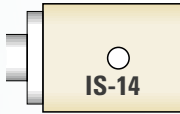
\*) The IS-14 geometry is available in T, and the IS-16 geometry is available in HT.

## AVAILABLE SHADES

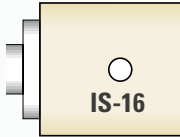


## AVAILABLE GEOMETRIES

**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](http://www.vita-zahnfabrik.com/VITA_ENAMIC_IS#titan_compatibility) or [www.vita-zahnfabrik.com/VITA\\_CADTemp\\_IS#titan\\_compatibility](http://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

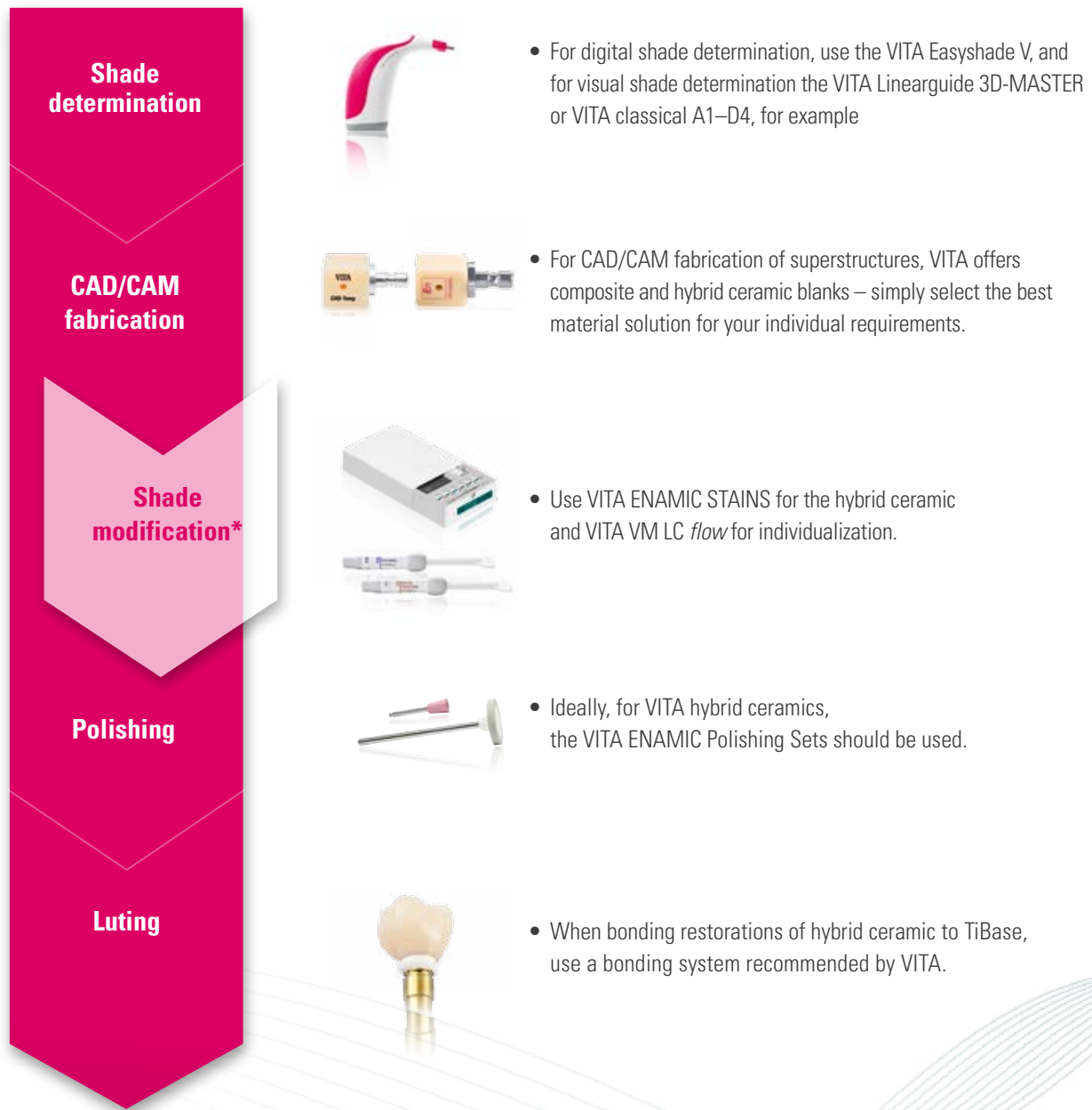


VITA ENAMIC  
polishing instruments





## IDEAL SOLUTIONS IN THE PROCESS



\*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](http://www.vita-zahnfabrik.com)



### Hotline Sales Support

Mr. Udo Wolfner and his team (Internal Sales Department) will be glad to assist you with orders or questions about the delivery, product data and marketing materials.

► **Phone +49 (0) 7761 / 56 28 84**  
**Fax +49 (0) 7761 / 56 22 99**  
**8:00 a.m. to 5 p.m. CET**  
**E-mail: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)**



### Technical Hotline

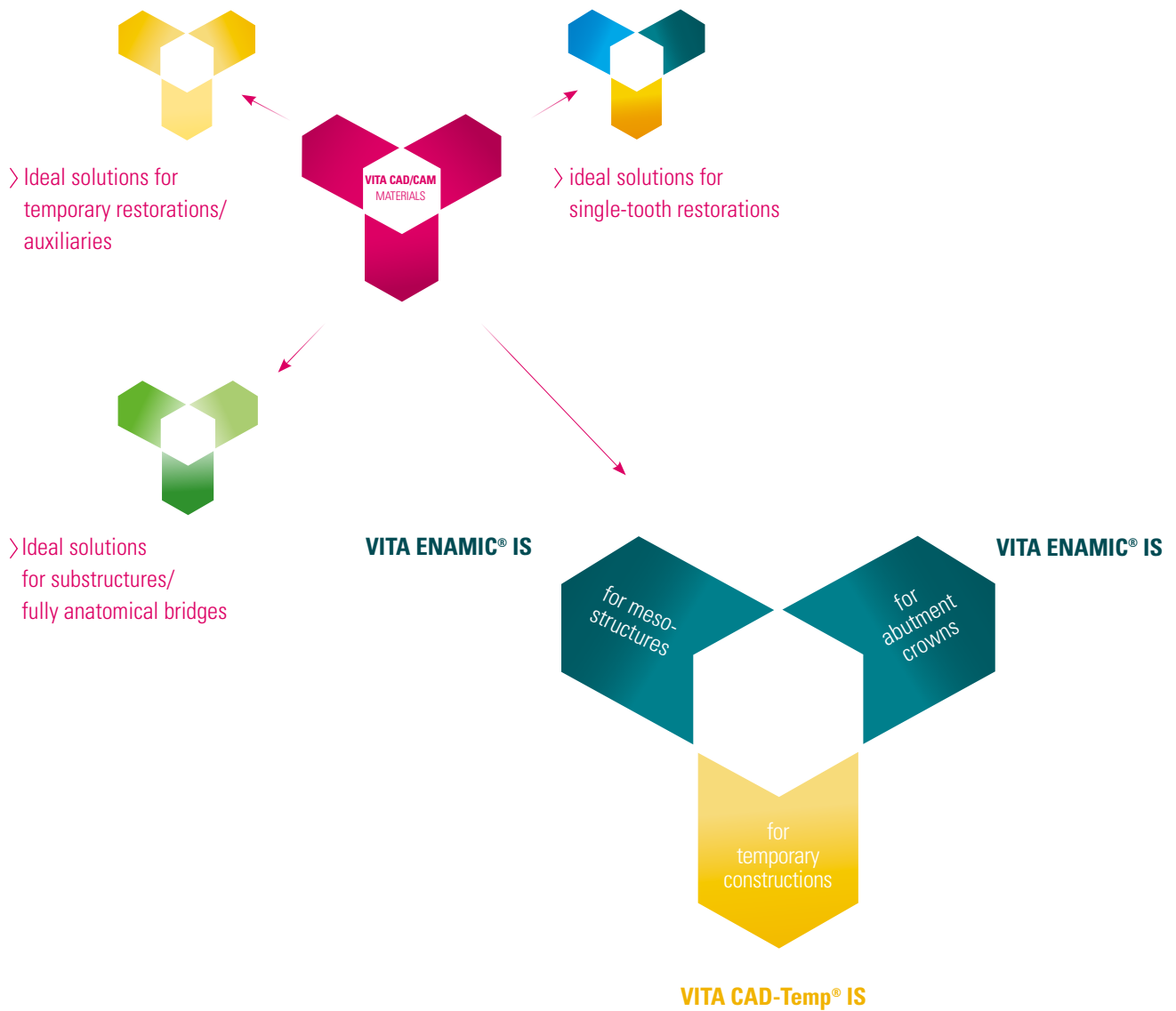
If you have technical questions concerning VITA product solutions, you can contact our technical specialists Mr. Ralf Mehlin or Mr. Daniel Schneider.

► **Phone +49 (0) 7761 / 56 22 22**  
**Fax +49 (0) 7761 / 56 24 46**  
**8:00 a.m. to 5 p.m. CET**  
**E-mail: [info@vita-zahnfabrik.com](mailto:info@vita-zahnfabrik.com)**

> Additional international contact information can be found at [www.vita-zahnfabrik.com/contacts](http://www.vita-zahnfabrik.com/contacts)



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



### > **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.

Research Report: In-vitro-Test zur Fähigkeit der Hybridkeramik, Kräfte zu absorbieren, January 2015.

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

Dr. Enno Bojemüller, Leiter Festkörperanalytik VITA F&E, VITA Zahnfabrik, Bad Säckingen

Dr.-Ing. Andrea Coldea, Materialentwicklung F&E, Bad Säckingen

Dr. Dipl.-Min. Berit Müller, Projektleiterin VITA F&E, VITA Zahnfabrik, Bad Säckingen

Prof. Dr. Dr. Jens Fischer, Ressortleiter F&E, Bad Säckingen

As of: 07.16

For detailed test data, see

Technical and scientific documentation for VITA ENAMIC;

Download via [www.vita-zahnfabrik.com/cadcam](http://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

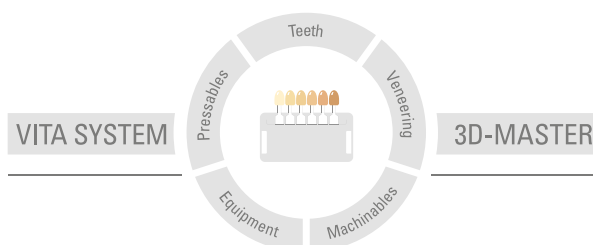
Spitalgasse 3, 79713 Bad Säckingen

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](http://www.vita-zahnfabrik.com/cadcam)



**Please note:** Our products must be used in accordance with the instructions for use. We accept no liability for any damage resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers that are not compatible or not authorized for use with our product and this results in damage. The VITA Modulbox is not necessarily a component of the product. Date of issue of this information: 10.18

After the publication of this information for use any previous versions become obsolete. The current version can be found at [www.vita-zahnfabrik.com](http://www.vita-zahnfabrik.com)

VITA Zahnfabrik has been certified in accordance to the Medical Device Directive and the following products bear the CE mark  0124:

**VITA ENAMIC® IS, VITA SUPRINITY® IS, VITAVM®11, VITA AKZENT® Plus, VITA CAD-Temp® IS, VITAVM®LC**

The products/systems of other manufacturers mentioned in this document are registered trademarks of the respective manufacturers.

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