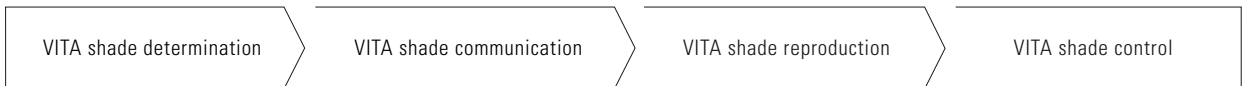


VITA ENAMIC® HYBRID CERAMIC

Information for dental technicians



Date of issue: 02.19



VITA – perfect match.

VITA

CONCEPT AND BENEFITS

VITA ENAMIC[®] simplifies the fabrication of esthetic restorations, as the material can be processed efficiently and precisely, while maintaining high reliability. Read on to learn more.



*The VITA ENAMIC formula for success:
elasticity + strength = reliability²*



VITA ENAMIC® HYBRID CERAMIC – SIMPLE, PRECISE AND ESTHETIC



What?

- VITA ENAMIC is the world's first and only tooth-colored hybrid dental ceramic featuring a dual ceramic-polymer network structure.
- The material combines enormous load capacity with high elasticity, allowing simple, efficient and precise fabrication of dental restorations.

What for?

VITA ENAMIC is particularly suited for:

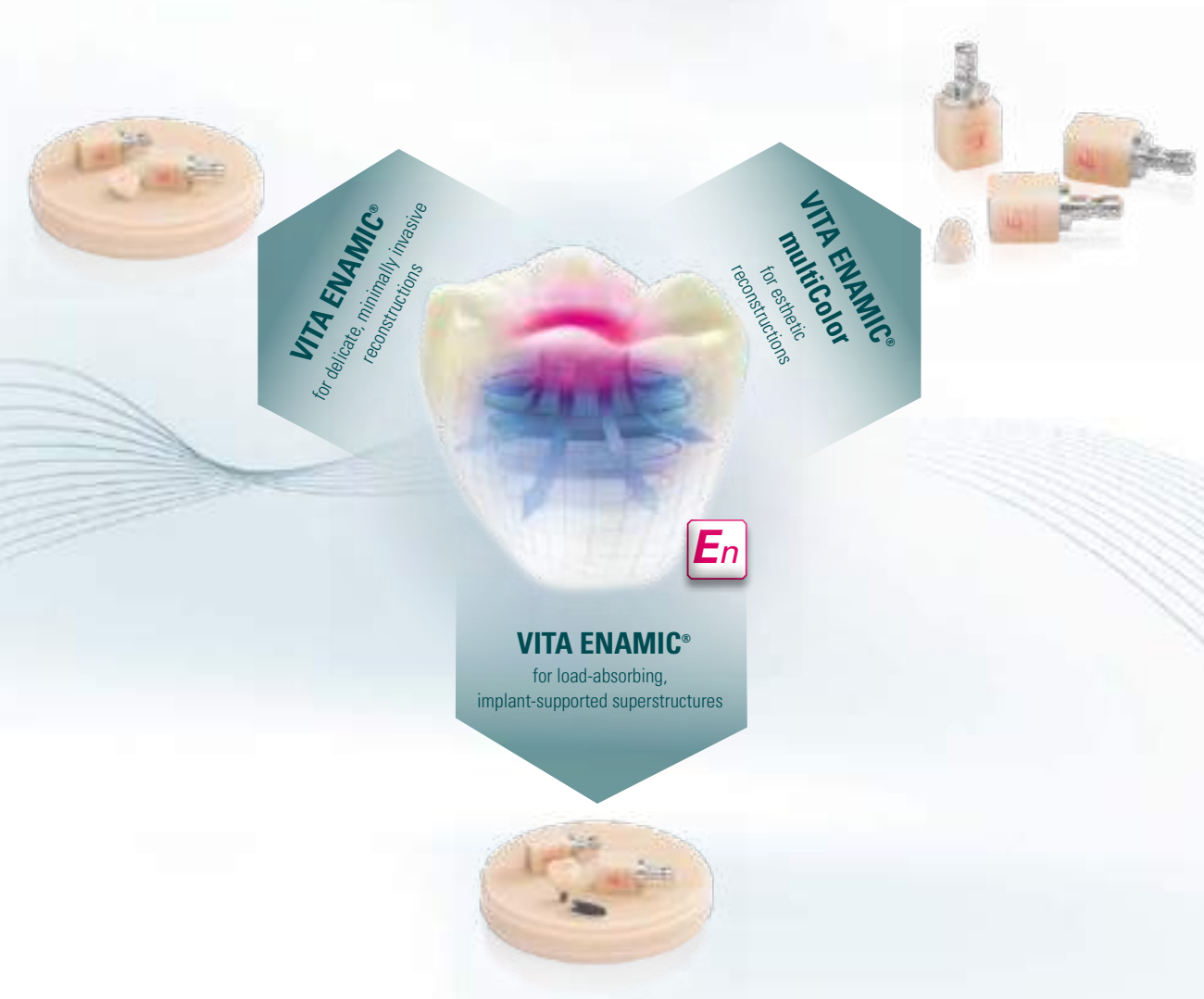
- delicate, esthetic monolithic reconstructions and implant-supported restorations that benefit from high load capacity.

With what?

VITA ENAMIC is available in several different variations and translucency levels:

- VITA ENAMIC, VITA ENAMIC multiColor
- T (Translucent), HT (High Translucent), ST (Super Translucent)

A MATERIAL FOR A VARIETY OF SOLUTIONS

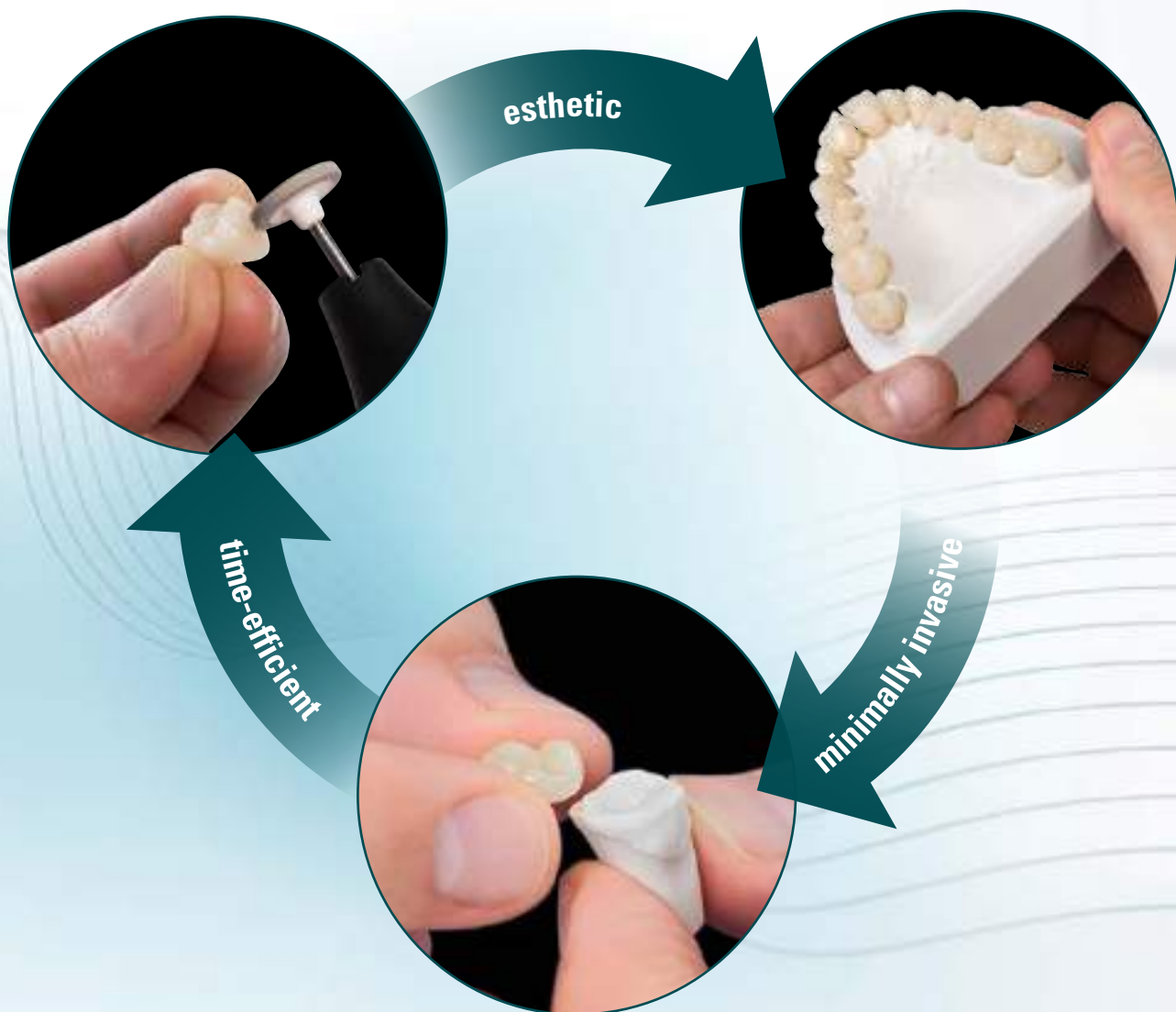


VITA ENAMIC® variations

- Monochromatic CAD/CAM blanks in three translucency levels for delicate, minimally invasive monolithic reconstructions.
- Multichromatic CAD/CAM blanks with integrated tooth color gradient for esthetic monolithic reconstructions at the push of a button.
- Mono- and multichromatic CAD/CAM blanks for the fabrication of implant-supported restorations with integrated "buffer function."*

*) For Sirona inLab MC XL users, special monochromatic VITA ENAMIC IS blanks with an integrated interface to an adhesive/titanium base are available to enable the fabrication of implant-supported reconstructions.

THE ADVANTAGES



Time-efficient

- Highly efficient completion of restorations by polishing or glazing and avoiding complex reworking steps or crystallization/sintering firing.

Natural and esthetic

- The ability to simply achieve natural and esthetic results, since the tooth-colored hybrid ceramic blanks feature outstanding light optical properties.

Minimally invasive

- Fabricating detailed, minimally invasive restorations, since the material allows for thin walls and thinning marginal areas.

Reliable

- The ability to produce durable implant-supported restorations with integrated buffer function from the enormously resistant hybrid ceramic.



VITA ENAMIC:
*Just polish and
deliver immediately!*

VITA ENAMIC®: MORE POSSIBILITIES FOR DIGITAL DENTAL TECHNOLOGY



minimally
invasive
restorations

esthetic
restorations

implant-
supported
restorations

**Why?**

VITA ENAMIC opens up new possibilities for the efficient and highly precise digital fabrication of esthetic reconstructions.

What for?**VITA ENAMIC:** Recommended indications

- minimally invasive reconstructions with reduced wall thicknesses
- posterior crowns that offer high load capacity in cases with limited space availability
- precise repair of small defects (e.g., delicate inlays)
- non-/minimally-invasive reconstruction of occlusal surfaces (table tops)
- monolithic veneering structures for digital hybrid bridges
- Implant-supported abutment crowns and mesostructures

VITA ENAMIC multiColor: Recommended indications

- esthetic crown restorations with vivid play of color/light
- delicate (non-prep) veneers for cosmetic reconstructions

EFFICIENT REPRODUCTION OF TOOTH SHADES



Simple shade reproduction

- Tooth-colored hybrid ceramic blanks in numerous VITA shades (0M1 – 4M2) enable fast and reliable reproduction of the natural tooth shade.

Various solutions

- Thanks to excellent light refraction properties and blanks available in three translucency levels, numerous esthetic challenges can be efficiently solved with VITA ENAMIC.

USING THE UNIQUE MATERIAL CONCEPT



Proven material concept

- With VITA ENAMIC, the proven concept of reinforced ceramic-polymer materials, which has already been tried and tested in construction and aircraft construction, is now available for dental applications.

Reinforced ceramic structure

- In VITA ENAMIC, the dominant ceramic network is reinforced by a polymer network to ensure improved mechanical properties.

Used a million times over

- Since 2013, VITA ENAMIC hybrid ceramic has been used to fabricate approximately 1.5 million units in numerous laboratories and practices all over the world.



THE RESTORATIVE CONCEPT

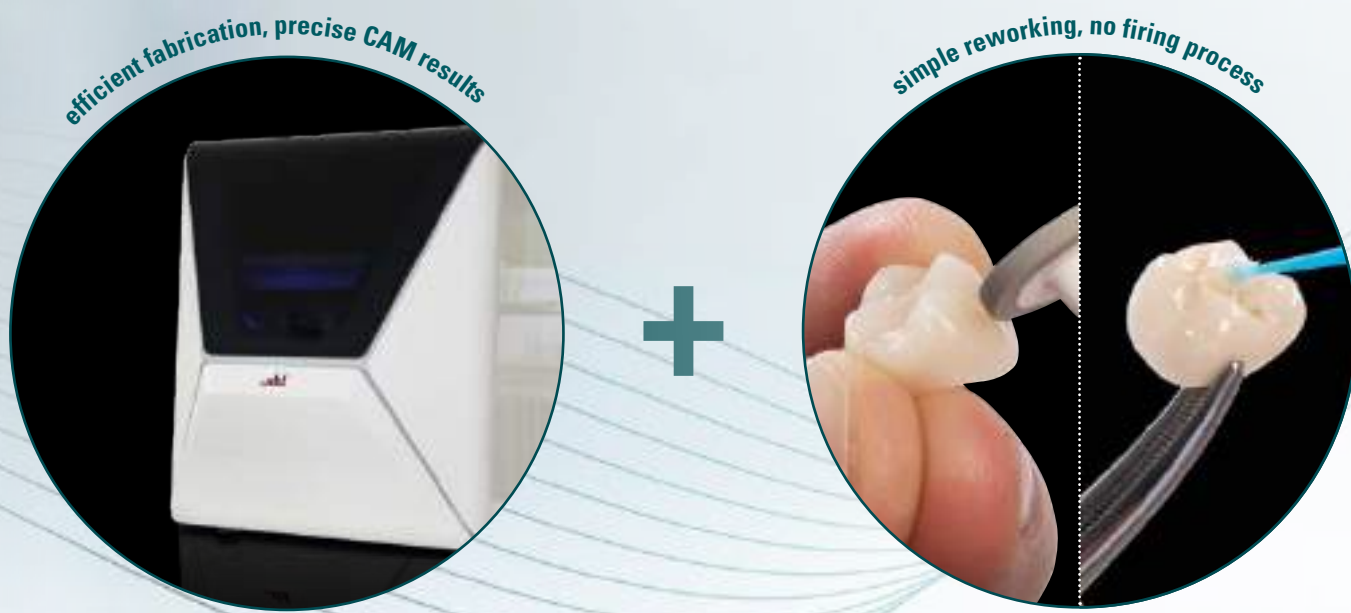
Using a two-step restorative concept, **VITA ENAMIC**[®] hybrid ceramic allows the efficient fabrication of esthetic restorations. Learn more now.



En

VITA ENAMIC:
*For efficient fabrication of
dental restorations at an ideal
price-performance ratio.*

THE MONOLITHIC TWO-STEP RESTORATIVE CONCEPT – EFFICIENT AND NATURAL



1. CAM FABRICATION*

→ approx. 5 – 20 min.



2. REWORKING/ POLISHING**

→ approx. 5 min.



Workflow example: VITA ENAMIC posterior crown, monolithic – 2 steps (block blank, tooth-colored)

1. CAM FABRICATION*

→ approx. 15 – 30 min.

2. REWORKING

→ approx. 2 min.

3. SINTERING PROCESS

→ approx. 80 min. (= speed sintering process)

Workflow example: posterior crown made of zirconia ceramic, monolithic - 5 steps (disc blank, precolored)

*) Note: Exemplary representation of the system; grinding/milling times may vary depending on the CAM system, software, processing strategy and blank geometry.
 **) Instead of polishing, staining and glazing with light-curing stains is also an option.



natural and esthetic



FINAL RESULT!

4. CHARACTERIZATION/GLAZING
→ approx. 2 min.

5. GLAZE FIRING/STAINS FIRING
→ approx. 10 – 15 min.

FINAL RESULT

A dental professional wearing a blue clinical coat is holding a transparent, grid-like mesh. Five natural teeth are placed on the grid, illustrating the precision and detail of the restorations. The background is a soft, out-of-focus clinical setting.

FACTS AND FEATURES

VITA ENAMIC® is the material for efficient fabrication of detailed and reliable restorations. Read all the facts and features.



VITA ENAMIC:
The hybrid ceramic enables very delicate and precise restorations!



TWO BENEFITS FOR EFFICIENT AND COST-EFFECTIVE FABRICATION

1. Time-efficient fabrication, thanks to unique material structure



1. CAM fabrication:
approx. 5 - 20 minutes*



2. Reworking:
approx. 2 minutes



**3. Polishing:
or Glazing:**
approx. 3 minutes

done! 

VITA ENAMIC

- enables the fabrication of restorations within a short period of time and avoids complex reworking or a crystallization/sintering firing process
- is finalized by polishing/glazing immediately after CAM fabrication and can be delivered to the practice immediately afterwards

*) Note: Exemplary representation of the system; grinding/milling times may vary depending on the CAM system, software, processing strategy and blank geometry.

2. Cost-effective CAD/CAM fabrication, thanks to long tool life!



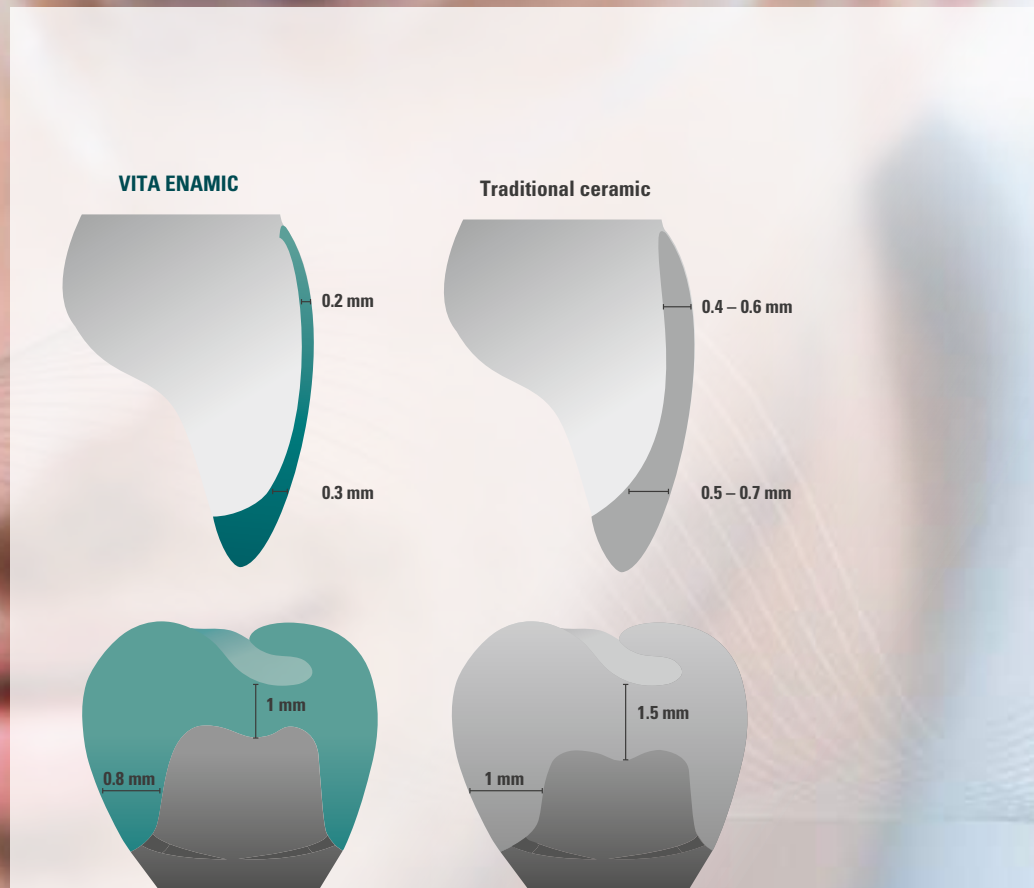
Source: Internal study VITA R&D, Schleiferstandzeitversuche zur CAM-Fertigung von Molarenkronen aus o. g. Materialien mit jeweils einem neuen Schleiferpaar mittels Sirona MC XL-Schleifeinheit, Software 3.8 x, report 03/10 ([1] see back of brochure)

VITA ENAMIC

- **enables cost-effective processing with numerous systems**
the hybrid ceramic allows long tool life
- **milling tools last up to seven times longer when tested**
compared to glass ceramics, when fabricating crowns with Sirona MC XL

TWO BENEFITS FOR RESTORATIONS WITH PARTICULARLY SMALL DIMENSIONS

1. Minimally invasive restorations, thanks to reduced wall thickness!



VITA ENAMIC

- **enables minimally invasive restorations**
reduced wall thickness is possible, thanks to high resilience
- **is especially advantageous in cases of limited space**
where natural tooth structure must be preserved

2. Delicate reconstructions, thanks to integrated elasticity!



Source: Internal study VITA R&D; Visuelle Begutachtung von „Non-Prep“-Veneers aus o. g. Materialien mit Wandstärken von ca. 0,2 mm nach CAM-Fertigung mit Sirona MC XL-Einheit, Important: The manufacturer has not approved the use of IPS Empress CAD and IPS e.max CAD for a wall thickness of approx. 0.2 mm; report 10/2011 ([1], see back of brochure).

VITA ENAMIC

- enables **CAM fabrication of extremely delicate reconstructions** thanks to the low brittleness of the material
- exhibits **excellent CAM machinability in the test** the veneer geometry (approx. 0.2 mm) could only be achieved with hybrid ceramic-polymer materials*

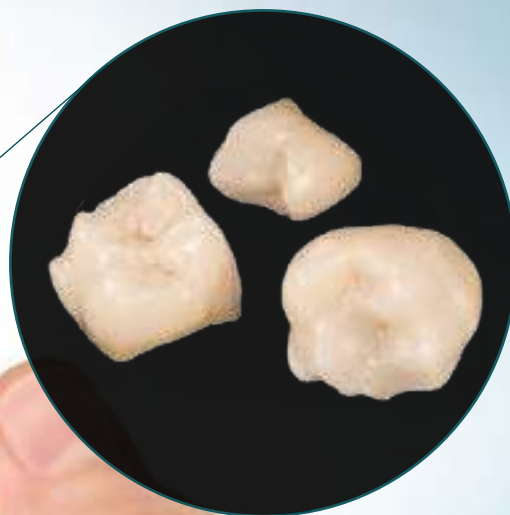
*) Important! The manufacturer has not approved the use of IPS Empress CAD and IPS e.max CAD for a wall thickness of approx. 0.2 mm.

TWO BENEFITS FOR HIGH-PRECISION RESULTS

1. Detailed morphology, thanks to ideal CAM machinability!

VITA ENAMIC: The CAD/CAM material to achieve accurate and detailed results!

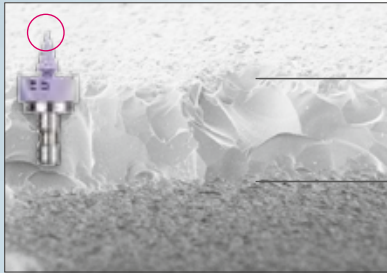
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VITA ENAMIC

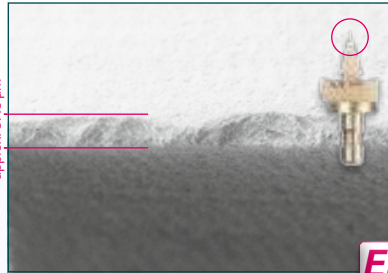
- enables CAM reconstructions with high accuracy for exact reproduction of the function

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



IPS e.max CAD

Source: Internal study 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 ([1], see back of brochure).



VITA ENAMIC

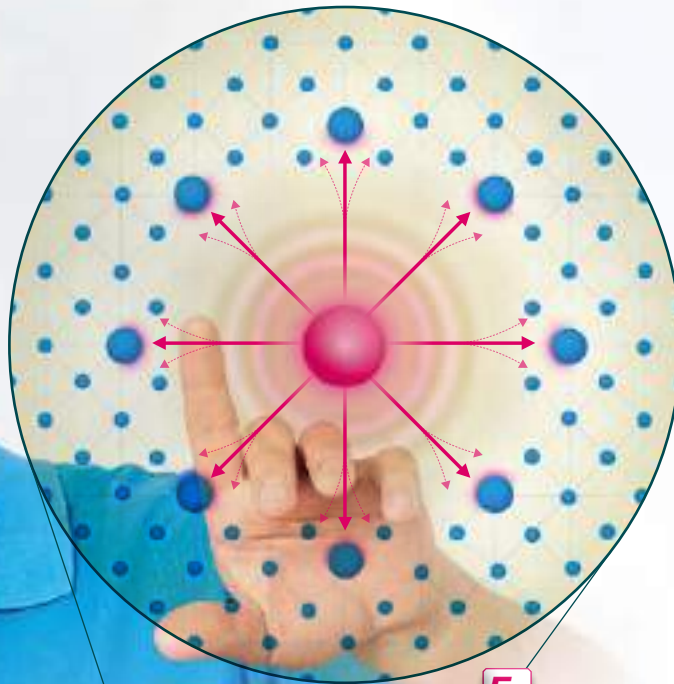
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VITA ENAMIC

- **enables precise and thinning marginal areas** for exact marginal fit, thanks to high edge stability
- **produces high marginal precision when tested** for objects with marginal areas and limited space

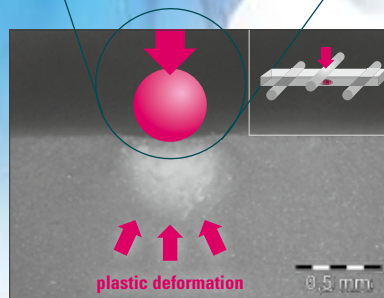
THREE REASONS FOR HIGH RELIABILITY

1. Reliability, thanks to durable material structure!

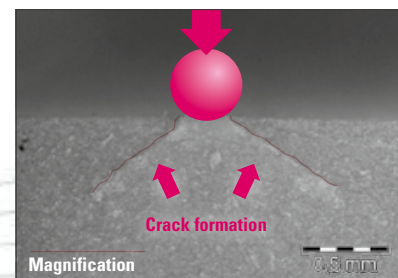


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VITA ENAMIC: material with integrated "crack-stop function"



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 ([1], see back of brochure).

VITA ENAMIC

- **exhibits outstanding reliability and durability**
the polymer network is able to stop crack propagation
- **reveals plastic deformation after prior damage in the test**
whereas, traditional ceramics reveal noticeable cracks

2. Clinical stability, thanks to enormous load capacity!



Source: Boston University, Prof. Dr. Russell Giordano, Boston, USA; Statische Bruchlastuntersuchung zu monolithischen, CAD/CAM-gefertigten und adhäsiv befestigten Kronen aus o. g. Materialien, report 07/13 ([3], see back of brochure).

VITA ENAMIC

- **indicates very good clinical stability**
since the material offers enormous load capacity after adhesive bonding
- **reaches the highest average fracture load value of 2,766 N**
of all CAD/CAM materials examined in the test

3. Excellent resilience – hybrid ceramic features high fracture load capacity and extraordinary elasticity

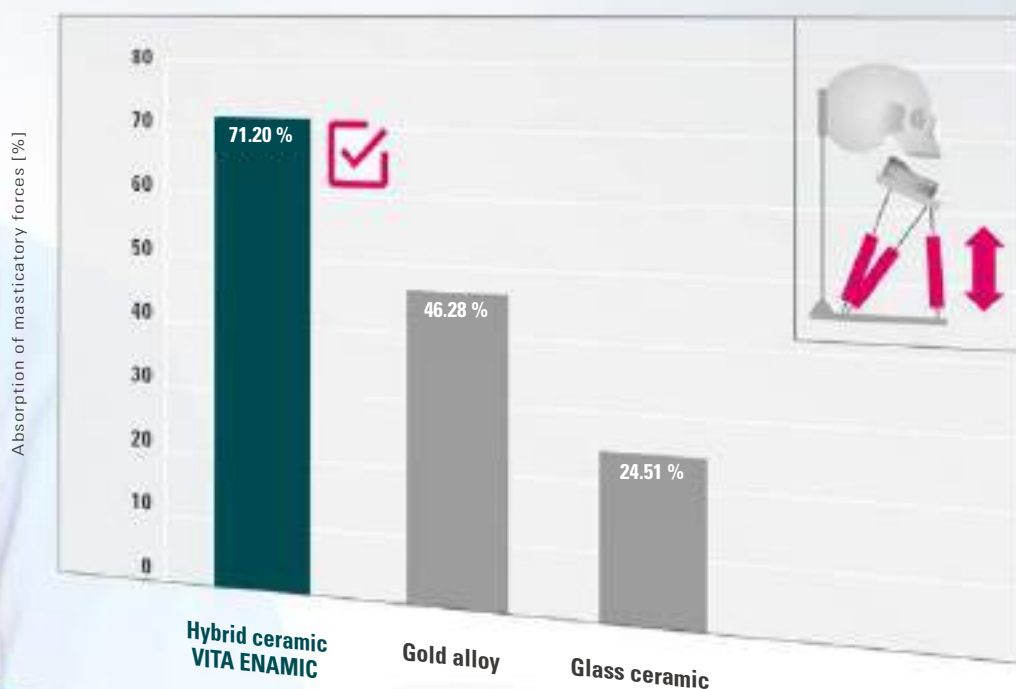


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Thanks to its polymer network, VITA ENAMIC offers an integrated "buffer function."



Absorption of masticatory forces compared to zirconia (ZrO₂)



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, ([2], see back or 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**
compared to very rigid zirconia material

ALLOWS FOR NUMEROUS ESTHETIC POSSIBILITIES

Natural esthetics, due to efficient characterization/individualization



1. Staining

VITA ENAMIC

- can be efficiently characterized with light-curing stains for natural and esthetic restorations



1. Cut-back

VITA ENAMIC

- can be individualized with veneering composite after the cut-back for lifelike results in the anterior area



2. Glazing



2. Individualizing



A man and a woman, both wearing blue scrubs, are shown in profile, looking at a tablet together. The man is in the foreground, and the woman is slightly behind him. They are both smiling. The background is a bright, clean clinical setting. A decorative graphic of thin, curved lines in shades of blue and teal is overlaid on the bottom right of the image.

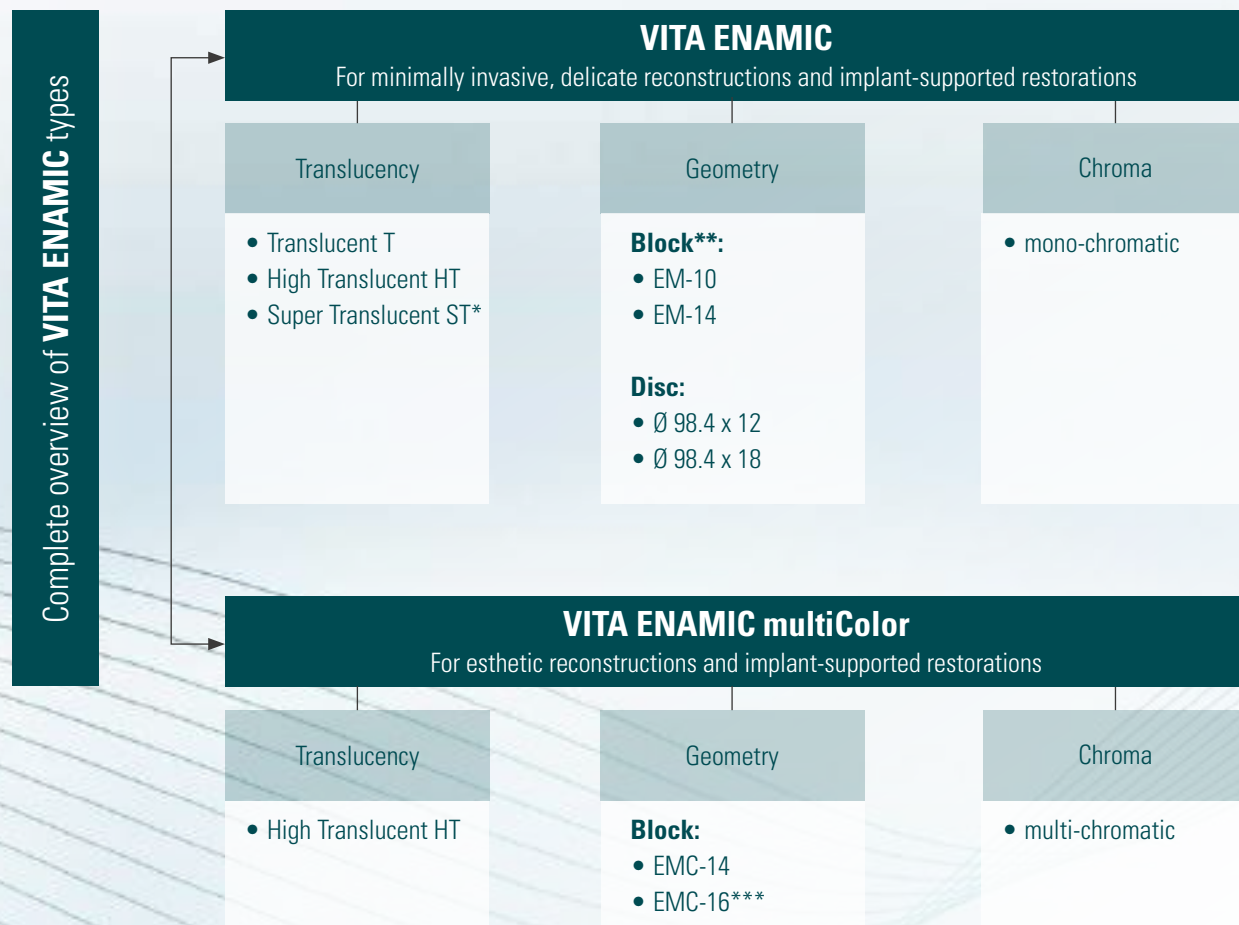
SYSTEM AND COMPONENTS

VITA ENAMIC® is available in a variety of geometries, translucency levels and shades. Perfectly matched system components enable efficient processing. Read on to learn more.



VITA ENAMIC:
*Suitable for various applications
and efficient processing.*

TYPES, GEOMETRIES, TRANSLUCENCY LEVELS



*) The ST type is only offered in the geometry EM-14.

***) The additional geometries IS-14 (in T) and IS-16 (in HT) are available for Sirona inLab MC XL users. These already have an integrated interface to an adhesive/titanium base. For more information visit www.vita-zahnfabrik.com.

***) Available from spring 2019

AVAILABLE SHADES

Translucency levels	VITA SYSTEM 3D-Master range of shades									
	0M1	1M1	1M2	2M1	2M2	2M3	3M1	3M2	3M3	4M2
Super Translucent*		■	■		■			■		■
High Translucent**	■	■	■	■	■	■	■	■	■	■
Translucent***	■	■	■	■	■	■	■	■	■	■

*) Super Translucent (ST) is available in the EM-14 type.

**) Limited range of shades for VITA ENAMIC multiColor EMC-14, IS-16 and discs: available in 1M1-HT, 1M2-HT, 2M2-HT, 3M2-HT and 4M2-HT.

***) Limited range of shades for VITA ENAMIC IS-14/Discs: IS-14 available in 1M1-T, 1M2-T, 2M2-T, 3M2-T and 4M2-T; discs available in 1M2-T, 2M2-T and 3M2-T.

RECOMMENDED INDICATIONS (for each type/level of translucency)



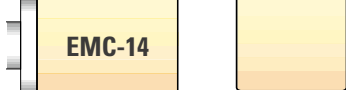


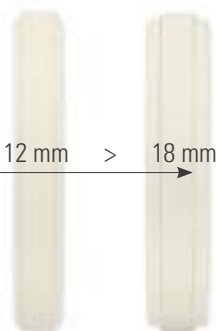
Degree of translucency	VITA ENAMIC			VITA ENAMIC multiColor
	T Translucent	HT High Translucent	ST Super Translucent	HT High Translucent
Indication				
	—	○	●	○
	—	○	●	○
	—	●	○	—
	—	●	○	○
	—	●	●	●
	—	●	○	●
	●*	●	—	●
	●	—	—	—
	●*	●	—	○
	—	●**	—	●**

● recommended ○ possible

*) Due to the comparatively high opacity, Translucent is recommended when metal structures or discolored natural tooth substance need to be masked.

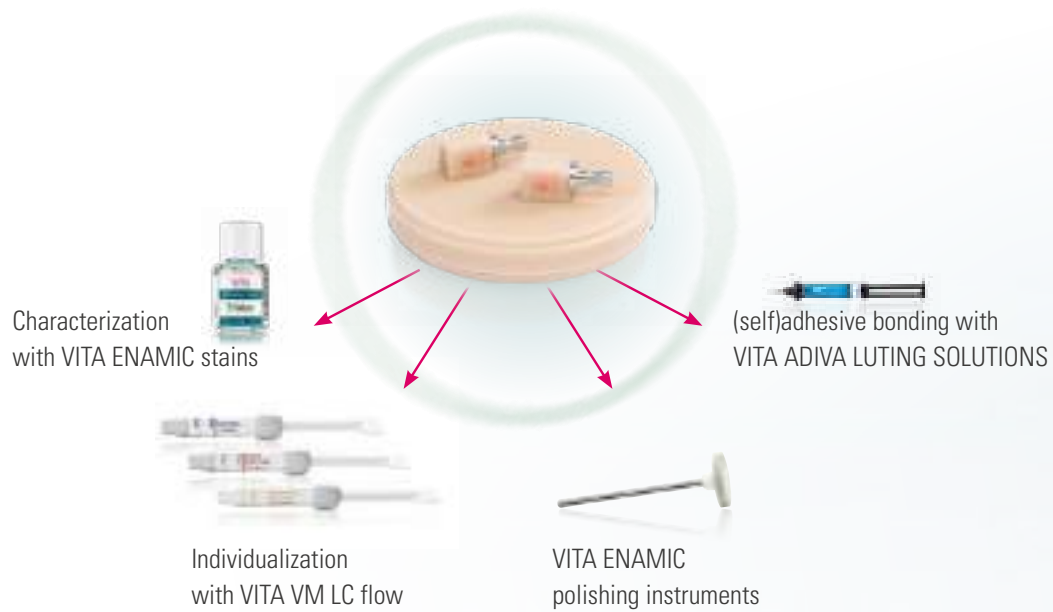
**) VITA ENAMIC is exclusively approved for the fabrication of veneering structures (VITA Rapid Layer Technology).

AVAILABLE GEOMETRIES

VITA ENAMIC		VITA ENAMIC multiColor	
 <p>EM-14</p> <p>EM-14: 12 x 14 x 18 mm</p>	 <p>EM-10</p> <p>EM-10: 8 x 10 x 15 mm</p>	 <p>EMC-14</p> <p>EMC-14: 12 x 14 x 18 mm</p>	 <p>EMC-16</p> <p>EMC-16*: 18 x 16 x 18 mm</p>
 <p>Disc: Ø 98.4 x h 12 mm, Ø 98.4 x h 18 mm</p>		 <p>12 mm > 18 mm</p>	

*) Erhältlich ab Frühjahr 2019

AVAILABLE SYSTEM COMPONENTS



Characterization with VITA ENAMIC stains

(self)adhesive bonding with VITA ADIVA LUTING SOLUTIONS

Individualization with VITA VM LC flow

VITA ENAMIC polishing instruments

DESCRIPTION OF COMPONENTS



VITA ENAMIC blanks

Pack of five VITA ENAMIC hybrid ceramic blanks.
Pack of 1 VITA ENAMIC hybrid ceramic disc



VITA ENAMIC Starter Set technical

10 packs of five VITA ENAMIC blanks in five shades and two translucency levels and one VITA ENAMIC Polishing Set technical.



VITA ENAMIC Polishing Set technical

Two-stage polishing system with a total number of eight pre- and high-gloss polishers for the handpiece.



VITA ENAMIC STAINS KIT

Includes six light-curing stains and accessories for the reproduction of natural shade nuances of VITA ENAMIC restorations.



VITA VM LC flow

Light-curing, low-viscous composite materials for individualizing restorations, including VITA ENAMIC.



VITA ADIVA LUTING SOLUTIONS

Luting system for full-adhesive, self-adhesive and temporary luting of restorations.



SYSTEM COMPATIBILITY

CAD/CAM systems

VITA ENAMIC – SYSTEM SOLUTIONS*

VITA offers VITA ENAMIC with specific holder systems for these CAD/CAM systems:

- inLab (Dentsply Sirona)
- Ceramill mikro IC/Ceramill Motion 2 (Amann Girschbach AG)
- KaVo ARCTICA/Everest (KaVo Dental GmbH)
- Planmill 40/PlanMill 40S (Planmeca)
- TS150 (Glidewell Laboratories)
- MyCrown Mill (FONA Dental s.r.o.)

VITA ENAMIC – UNIVERSAL SOLUTIONS*

VITA offers VITA ENAMIC with a universal holder system for these CAD/CAM systems:

- CORiTEC line (imes-icore GmbH)
- DGSHAPE DWX line (DGSHAPE Corporation)
- CS 3000 (Carestream Inc.)
- N4/R5/S1/S2/Z4/R5 (vhf camfacture AG)
- DMG ULTRASONIC line (DMG Mori AG)
- Rödgers RXD line (Rödgers GmbH)
- Zfx Inhouse5x (Zfx GmbH)
- MILLING UNIT M line (Zirkonzahn S.r.l.)
- Organical Desktop line (R+K CAD/CAM Technologie GmbH & Co. KG)

BONDING SYSTEMS**

VITA ENAMIC restorations can be fully and self-adhesively bonded. Bonding is carried out based on the proven protocol for feldspar ceramics. The hybrid ceramic is etched (60 sec) with hydrofluoric acid (VITA ADIVA CERA-ETCH), cleaned and then silanized (VITA ADIVA C-PRIME). Information on bonding is available at www.vita-zahnfabrik.com/adiva



Recommended system

- **VITA ADIVA LUTING SOLUTIONS** (full-/self-adhesive)

Other systems

- Variolink Esthetic (Ivoclar Vivadent), Vitique (DMG)
- NX3 (KerrHawe), Calibra Ceram (DENTSPLY), RelyX Ultimate (3M ESPE), Bifix QM (VOCO)
- PANA VIA F2.0/PANA VIA V5 (Kuraray), DuoCem (Coltène/Whaledent)

*) The range of geometries/shades of VITA CAD/CAM materials available may vary for the individual CAD/CAM system partners or systems.

***) Self-adhesive systems may only be used for crown restorations.

IDEAL SOLUTIONS IN THE PROCESS



* Note "Optional process steps": The hybrid ceramic can be seated directly after milling and polishing. Characterization with light-curing stains and individualization with veneering composite are optional process steps.

WE ARE HAPPY TO HELP

> More information about the products and processing is also available at 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



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**

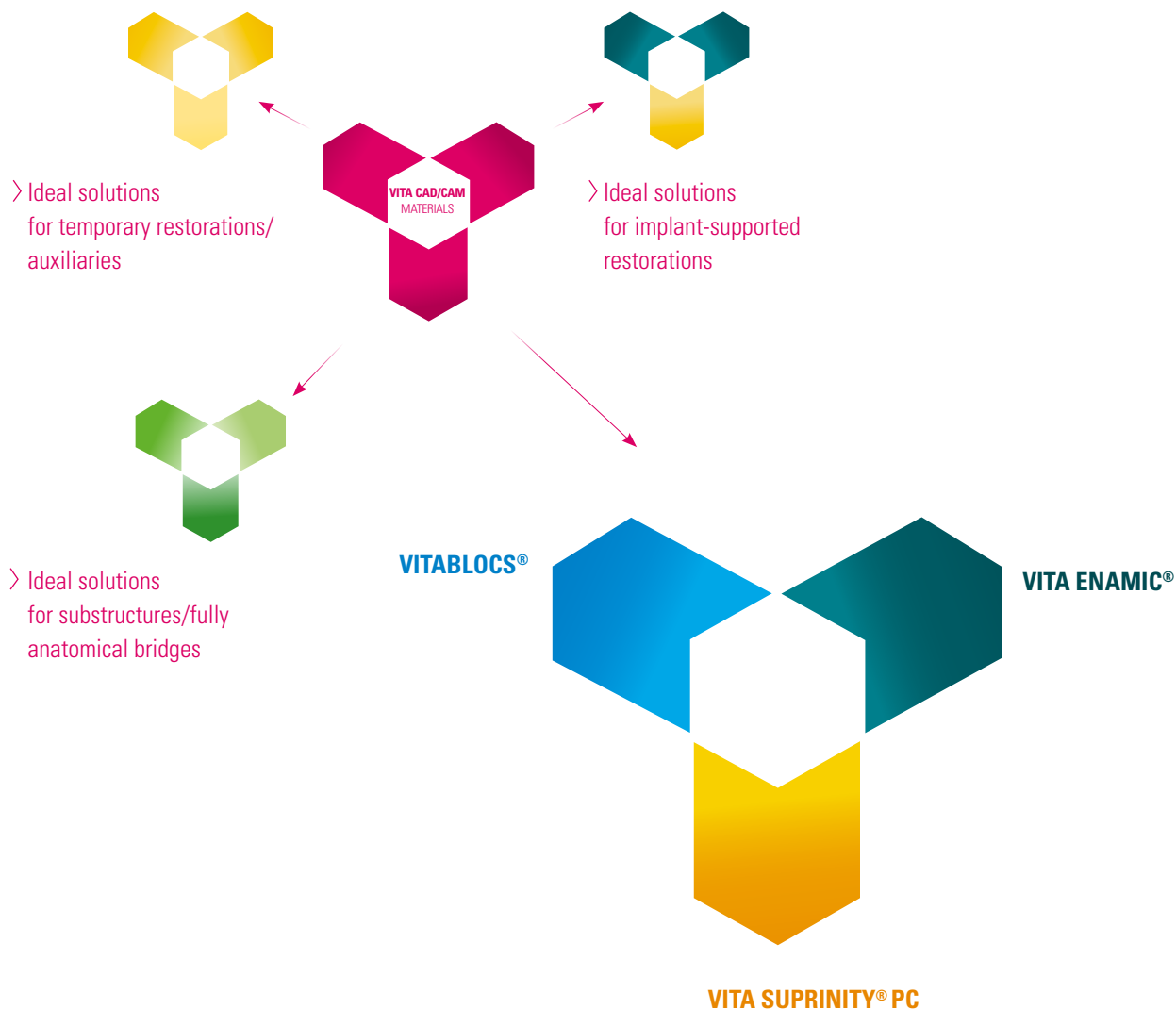
8:00 a.m. to 5 p.m. CET

E-mail: info@vita-zahnfabrik.com

> Additional international contact information can be found at www.vita-zahnfabrik.com/contacts



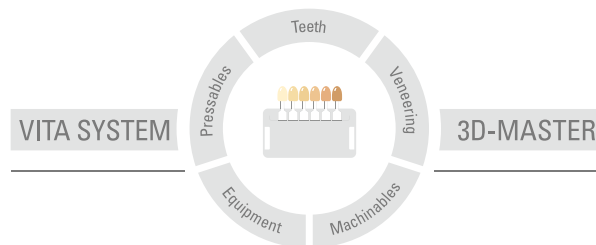
VITA CAD/CAM MATERIALS – for ideal solutions. Proven a million times over.



> **Ideal solutions for single-tooth restorations**

Over the course of 30 years, more than 20 million single-tooth restorations have been fabricated using esthetic tooth-colored VITA CAD/CAM ceramics. Today, laboratories can choose the perfect material solution for their individual needs, from highly esthetic feldspar ceramics, high-strength glass ceramics and innovative hybrid ceramics to treat a variety of single-tooth indications. In addition, these CAD/CAM ceramics are distinguished by simple and efficient processing.

More information about VITA ENAMIC
is available at www.vita-enamic.com



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VITA Zahnfabrik H. Rauter GmbH & Co. KG
Research and Development Division
Spitalgasse 3, 79713 Bad Säckingen, Germany
Dr. Enno Bojemüller, head of Solid State Analysis VITA R&D, VITA Zahnfabrik,
Bad Säckingen
Dr.-Ing. Andrea Coldea, Material Development, R&D Inorganic Chemistry,
Bad Säckingen
Dr. Berit Müller, project manager for VITA R&D, VITA Zahnfabrik, Bad Säckingen
Prof. Dr. Dr. Jens Fischer, R&D division director, Bad Säckingen

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Investigator: Dr. Maria Menini, Department for fixed and implant-prosthetic
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Development of Novel All-Ceramic Restorations and Wear, Strength, and Fatigue
of Restorative Materials
Research Report, Juli 2013
Principal Investigator: Russell Giordano, D.M.D., D.M.Sc., Director of Biomaterials
Boston University, Goldman School of Graduate Dentistry, Department of
Biomaterials, Boston MA, USA

For detailed test data, see Technical and scientific documentation VITA ENAMIC®
Download at www.vita-enamic.com

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Acknowledgements

We would like to thank MDT Maurice T. Anderson (Bad Säckingen, Germany) for the fabrication of numerous VITA ENAMIC reconstructions.

VITA

VITA Zahnfabrik H. Rauter GmbH & Co.KG
Spitalgasse 3 · D-79713 Bad Säckingen · Germany
Tel. +49(0)7761/562-0 · Fax +49(0)7761/562-299
Hotline: Tel. +49(0)7761/562-222 · Fax +49(0)7761/562-446
www.vita-zahnfabrik.com · info@vita-zahnfabrik.com
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