

VITA ENAMIC® for CEREC®/ inLab®

Working Instructions
Software



VITA shade taking

VITA shade communication

VITA shade reproduction

VITA shade control

Date of issue: 06.12

VITA shade, VITA made.

VITA

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Sirona CEREC AC system



Sirona inLab MC XL system

Information about the CEREC and inLab systems is available from:

Sirona Dental Systems GmbH
Fabrikstraße 31 · D-64625 Bensheim

email: contact@sirona.de
www.sirona.com





Ceramic network structure



Polymer network structure



Integrated crack stop function

VITA ENAMIC is the first dental hybrid ceramic with dual network structure.

The dominant fine structure ceramic network is reinforced by a polymer network in this dental material to ensure that both networks penetrate one another.

Accordingly, VITA ENAMIC is a dental hybrid material, which combines the positive characteristics of ceramic and composite.

This innovative hybrid material ensures unique balance between strength and elasticity and provides high absorption of masticatory forces.

Consequently, VITA ENAMIC is perfectly suited for implant-supported crown restorations.

Product characteristics and advantages

- Significantly lower brittleness than pure ceramic and better abrasion behavior than composites.
- Enamel-like abrasion characteristics achieved by the fine-structure ceramic network.
- Clearly higher elasticity than traditional dental ceramics since the acrylate polymer network provides flexibility.
- Very high reliability: Thanks to its dual network structure, VITA ENAMIC features a reliable crack stop function. As a result, probability of failure caused by initial crack formation is significantly lower than for ceramic.
- Very accurate and precise milling results for the restoration thanks to exceptional marginal stability of the material.
- Compared to silicate ceramic, it is possible to mill restorations with thinner walls. Suitable for minimally invasive restorations.
- Can be perfectly milled with diamond instruments.
- Compared to silicate ceramic, life of milling tools increased by about 3-fold in the normal milling mode.
- Compared to silicate ceramic, milling times reduced up to 45% in the fast milling mode.
- Simple bonding with self-adhesive composites is enabled.

Chemical composition of the ceramic network*

Oxides	Percentage by weight
SiO ₂	56–64
Al ₂ O ₃	20–23
Na ₂ O	6–9
K ₂ O	6–8
CaO	0.3–0.6
TiO ₂	0.0–0.1

Chemical composition of the polymer network*

Organic components	Percentage by weight
TEGDMA (Triethylene glycol dimethacrylate)	33
UDMA (Urethane dimethacrylate)	66
Bonding agent and starter	≤ 2

* The values of the chemical composition listed above are dependent on the lot. Chemical elements (oxides) which are contained in very low concentrations and are required e.g. for coloring, are not listed.

Physical data*

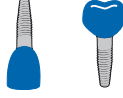
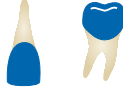


Property	Unit	Value
Flexural strength (ISO 6872)	MPa	approx. 130–140
Modulus of elasticity (resonance method)	GPa	approx. 26–30
Weibull modulus	–	approx. 25
Hardness	GPa	approx. 2

* The technical/physical values are typical measuring results and refer to internal samples and measurements carried out with measurement equipment available on site. If samples are prepared using different methods and measurement equipment, other measuring results may be obtained.

Indication

VITA ENAMIC for CEREC / inLab is indicated for the fabrication of fully anatomical, esthetic single tooth restorations if

- the preconditions for the adhesive or self-adhesive bonding technique are present.

Indication	VITA ENAMIC
Crowns on implants 	●
Crowns on prepared teeth 	●
Onlays/Inlays 	●
Veneers 	●

● recommended

Contraindication

- Bridge restorations
- Parafunctions (e.g. bruxism)

Processing requirements for VITA ENAMIC

Hardware requirements

- VITA ENAMIC can be processed with the CEREC and inLab milling systems of Sirona.

Software requirements

- CEREC 3D software ≥V3.8x or inLab 3D ≥V3.8x.



The shade concept

The shades of VITA ENAMIC have been matched with those of VITA SYSTEM 3D-MASTER, which is the only tooth shade system available on the market that takes all 3 color dimensions into account and integrates them into a systematic classification principle for shade determination and shade reproduction:

Value – Chroma – Hue

Overview of blocks

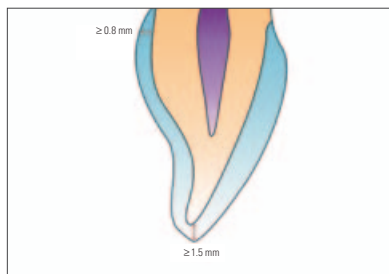
- Shades:

high translucent	0M1-HT 	1M1-HT 	1M2-HT 	2M2-HT 	3M2-HT
translucent	0M1-T 	1M1-T 	1M2-T 	2M2-T 	3M2-T

- Size: 12 x 14 x 18 mm
- Designation: EM-14 (ENAMIC, size 14)

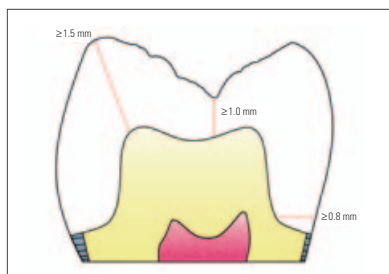
Layer thicknesses and preparation guidelines

The following **minimum layer thicknesses** must be adhered to in order to ensure clinical success of restorations made from VITA ENAMIC:



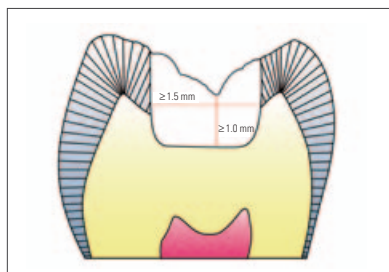
Anterior crowns

Incisal: **at least 1.5 mm**
Circumferential: **at least 0.8 mm**



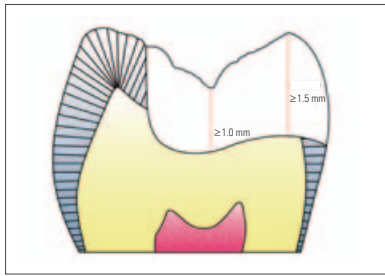
Posterior crowns

At the bottom of the fissure: **at least 1.0 mm**
In the area of the cusps: **at least 1.5 mm**
Circumferential: **0.8–1.5 mm**



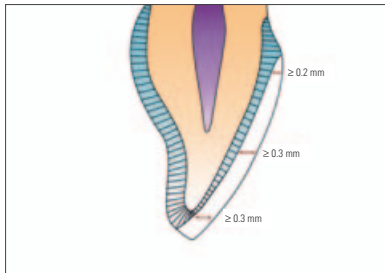
Inlays

At the bottom of the fissure: **at least 1.0 mm**
In the area of the isthmus: **at least 1.5 mm**



Onlays

At the bottom of the fissure: **at least 1.0 mm**
In the area of the cusps: **at least 1.5 mm**



Veneers

Labial: **on average at least 0.3 mm**
Incisal third: **at least 0.3 mm**
Central third: **at least 0.3 mm**
Cervical third: **at least 0.2 mm**

Design

- Designing the restoration with the CEREC or inLab 3D \geq V4.0x software.
- Selecting the VITA ENAMIC (EM-14) block in the drop-down menu.

Optional: Characterization of the shade (staining technique)

Simple characterization of the shade of restorations (staining technique) made from VITA ENAMIC can be achieved with the special VITA ENAMIC STAINS, which are polymerized on the restoration. Then the surface is sealed with a special varnish. The special **VITA ENAMICS STAINS KIT** with 6 shades and accessories is available for this purpose. Please observe the respective working instructions.

Optional: Individualization (layering technique)

Special light-curing methacrylate-based composites, in particular low-viscous composites, are suitable for direct and indirect individualization steps, such as subsequent application of contacts and minor adjustments of the shape, etc., since these composites can be easily applied on and adapted to the restoration. Moreover indirect veneering composites, such as VITA VM LC, are also suitable for extraoral use. It is recommended to condition the surface of the ENAMIC restoration with a suitable bonding agent prior to the individualization.

Please adhere to the information in the respective Product Information, No. XXXXX

Reworking (extraoral)

Restorations made from VITA ENAMIC must not be reworked using tungsten carbide instruments since such instruments may damage the material.

Use only diamond-coated milling tools or special polishing tools.

When reworking restorations, exert only slight pressure.

For prepolishing and high gloss polishing of VITA ENAMIC, the specially developed 2-stage

- **VITA ENAMIC Polishing Set technical** or the
- **VITA ENAMIC Polishing Set clinical** are available.
- Use diamond tool to remove the sprue.
- Fit in and check proximal and occlusal contacts.
Use the instruments of the VITA ENAMIC Polishing Set technical or clinical for contouring and prepolishing.

Adhesive bonding

- Adhesive bonding using light- or dual-curing fine hybrid composites is required for restorations made from VITA ENAMIC.
- The self-adhesive composite RelyX Unicem (3M Espe) is exclusively suitable also for cementing crowns (dentine adhesion).
When using this composite, the restoration is etched with hydrofluoric acid for 60 sec and silanized subsequently.
- Crowns should preferably be cemented using a highly flowable, dual-curing composite (depending on the layer thickness).
- The ultrasonic insertion method or preheated composite can be used for stronger composite materials.
- Dual-curing composites should not be used for thin veneers since these composites may cause a slight change in color (yellow shade) after curing. Therefore a light-curing composite should be preferred. A microbrush glued to the veneer using a light-curing bonding material can be used as a retention tool. Fixing the veneer with the finger allows more uniform distribution of pressure during the adhesive cementation.

		VITA ENAMIC		
Adhesive technique	Adhesive composite	Crown	Onlay/Inlay	Veneer
Conventional with adhesive system	Fine hybrid composite with adhesive system: for example, VITA DUO CEMENT with VITA A.R.T. BOND	●	●	●
Self-adhesive	Self-adhesive composite: RelyX Unicem	● ¹⁾	-	-

¹⁾ luted to dentine

Procedure for conventional adhesive technique with adhesive system

Conditioning the tooth substance

- If present, etch enamel with VITA ETCHANT GEL (phosphoric acid gel, 35 %) for 35 sec. Spray clean for 30 sec and dry for 20 sec.
Control: the etched surface must be white opaque.
- Agitate dentine primer (for example VITA A.R.T. BOND Primer A+B) for 30 sec. using a disposable brush or Microbrush, dry with air for 15 sec.
Agitate primer coat of adhesive (for example VITA A.R.T. BOND, Bonder) for 20 sec., clean carefully for 5 sec. (using air). Any excess should be soaked up with endo paper points. Light curing: 60 sec.

Conditioning the restoration

- Use alcohol to degrease the restoration before it is seated.
Apply VITA CERAMICS ETCH (hydrofluoric acid gel, 5 %) to the inner surfaces.
Etching time: 60 sec.
- Completely remove any remaining acid by using water spray (60 sec) or clean in the ultrasonic bath. Then dry for 20 sec. Do not brush off to avoid the risk of contamination! After drying, the etched surfaces exhibit a whitish opaque appearance. Apply silane to etched surfaces (for example VITASIL).
Allow to evaporate completely. Apply primer coat of adhesive (for example VITA A.R.T. BOND Bonder), blow off. Do not light cure!
The restoration must be protected against light before it is inserted.

Finishing and polishing (intraoral)

Pay attention to margins and contact points when finishing and polishing the restoration. Generation of heat must be avoided.

- Check if excess material has been applied; finish with files in the EVA handpiece or with the special polishing instruments of the VITA ENAMICS Polishing Sets (see page 12).
- A two-stage procedure is recommended to achieve a natural surface shine:
 - prepolishing with the diamond-coated polishers of the VITA ENAMIC Polishing Set (7,000 - 10,000 rpm).
 - high gloss polishing with the diamond-coated polishers of the VITA ENAMIC Polishing Set (5,000 - 8,000 rpm). Exert slight pressure only!

Tip: High gloss polishing is carried out at the lowest speed and under dry conditions.

Assortments VITA ENAMIC for CEREC/inLab

VITA ENAMIC translucent (T)				
Shade	Designation	Size in mm	Content of pack	Prod. No.
0M1-T	EM-14	12 x 14 x 18	5 pieces	EC40M1TEM14
1M1-T	EM-14	12 x 14 x 18	5 pieces	EC41M1TEM14
1M2-T	EM-14	12 x 14 x 18	5 pieces	EC41M2TEM14
2M2-T	EM-14	12 x 14 x 18	5 pieces	EC42M2TEM14
3M2-T	EM-14	12 x 14 x 18	5 pieces	EC43M2TEM14

VITA ENAMIC high translucent (HT)				
Shade	Designation	Size in mm	Content of pack	Prod. No.
0M1-HT	EM-14	12 x 14 x 18	5 pieces	EC40M1HTEM14
1M1-HT	EM-14	12 x 14 x 18	5 pieces	EC41M1HTEM14
1M2-HT	EM-14	12 x 14 x 18	5 pieces	EC41M2HTEM14
2M2-HT	EM-14	12 x 14 x 18	5 pieces	EC42M2HTEM14
3M2-HT	EM-14	12 x 14 x 18	5 pieces	EC43M2HTEM14

Accessories

VITA ENAMIC Polishing Sets

Specially developed set for time-saving and efficient polishing of VITA ENAMIC restorations. Includes all instruments for two-stage, well-coordinated polishing.

2 polishing sets with 8 polishers each are available:



- VITA ENAMIC Polishing Set technical with instruments for the handpiece

Prod. No. EENPSETT



- VITA ENAMIC Polishing Set clinical with instruments for the contra-angle

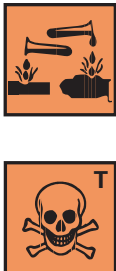

Prod. No. EENPSETC




VITA ENAMIC STAINS KIT

Specially developed assortment for characterizing (staining technique) the shade of restorations made from VITA ENAMIC. Contains 6 light curing shades, sealing varnish and accessories.

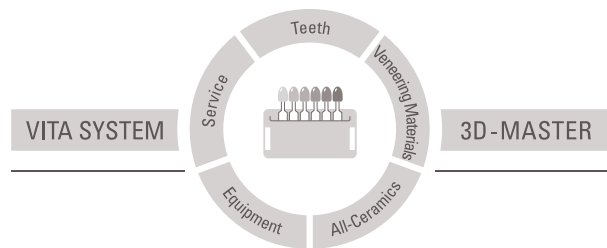
Prod. No. EXXXXXXX

The following products require hazard labeling:		
<p>VITA CERAMICS ETCH (hydrofluoric acid ceramic etching gel)</p>	<p>Caustic/Toxic</p> <p>Toxic on inhalation, in contact with skin and if swallowed. Causes severe burns. Store container well sealed at an adequately ventilated place. In case of contact with eyes, rinse thoroughly with water and consult a doctor. In case of contact with skin, rinse immediately with copious amount of water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Keep away from living quarters. This material and its container must be disposed of as hazardous waste.</p>	
<p>VITA ETCHANT GEL (Phosphoric acid etching gel)</p>	<p>Caustic</p> <p>When working with the product, do not eat and drink. Do not inhale gas/fume/vapor/aerosol. In case of contact with eyes, rinse thoroughly with water and consult a doctor. When working with the product, wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste.</p>	

<p>Protective clothing</p>	<p>When working with the product, wear suitable protective clothing, gloves and eye/face protection.</p>	
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For detailed information, please refer to the respective safety datasheets.

With the unique VITA SYSTEM 3D-MASTER all natural tooth shades are systematically determined and completely reproduced.



Please note: Our products should be used according to the working instructions. We cannot be held liable for damages 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 porcelains and equipment from other manufacturers which are not compatible or not authorized for use with our product. Furthermore, our liability for the correctness of this information is independent of the legal ground and, in as far as legally permissible, is limited to the invoiced value of the goods supplied excluding turnover tax. In particular, as far as legally permissible, we do not assume any liability for profit loss, for indirect damages, for consequential damages or for claims of third parties against the purchaser. Claims for damages based on fault liability (culpa in contrahendo, breach of contract, unlawful acts, etc.) can only be made in the case of intent or gross negligence. The VITA Modulbox is not necessarily a component of the product.

Date of issue of these working instructions: 06.12

VITA Zahnfabrik is certified according to the Medical Device Directive and the following product bears the CE mark **CE 0124** :

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VITA

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