

VITA CAD-Temp®

Working Instructions



VITA shade determination

VITA shade communication

VITA shade reproduction

VITA shade control

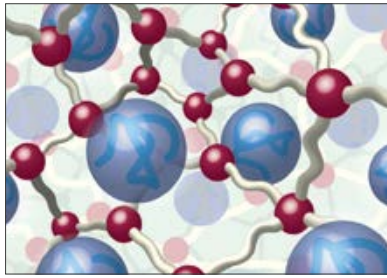
Date of issue: 03.18




VITA – perfect match.

VITA

Composite material made from acrylate polymer
for the fabrication of long-term temporary restorations

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-  PMMA pearls, swollen by monomer
-  cross-linked monomer
-  inorganic microparticle filler material polymerized into the polymer network

VITA CAD-Temp monoColor and VITA CAD-Temp multiColor consist of a unique fiber-free, homogeneous, high-molecular and cross-linked acrylate polymer with microparticle filler, or MRP material.

In the MRP material (Microfiller Reinforced Polyacrylic) developed by VITA inorganic microfillers are polymerized into the network and a completely homogeneous, methyl methacrylate-free material is obtained by the unique repressing technique of VITA, which exhibits superior material quality and outstanding abrasion resistance.






Physical properties

Properties	Unit	Value*
Flexural strength	MPa (Nmm ⁻²)	>80
Modulus	MPa (Nmm ⁻²)	approx. 2800
Softening temperature (DSC)	°C	approx. 118
Inorganic filler content	Wt%	approx. 14
Water absorption	complies with EN ISO 10477 Polymer based crown and bridge materials	
Solubility	complies with EN ISO 10477 Polymer based crown and bridge materials	
Shade stability	complies with EN ISO 22112 Artificial teeth for dental prostheses	

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

Indication and processing requirements

VITA CAD-Temp is used for the fabrication of multi-unit, fully or partially anatomical long-term temporary bridge restorations with a span of up to two pontics and a clinical wearing period of up to 3 years. For requirements of CAD/CAM systems, please refer to the information provided by the manufacturer of the respective system.

Indication	 Anterior crown	 Posterior crown	 Anterior bridges*	 Posterior bridges*	 Drilling templates
VITA CAD-Temp	●	●	●	●	●

● recommended * Only terminal bridges are recommended for wearing periods of more than 6 months.

The shade concept

Materials with a single color (monoColor) or four color layers (multiColor) are available.

CAD-Temp monoColor	0M1T*	1M2T	2M2T	3M2T
				
CAD-Temp multiColor		1M2T	2M2T	3M2T
				

* For the reproduction of bleached teeth (only available in size CT-40)

Preparation guidelines

Since VITA CAD-Temp restorations normally provide the basis for definitive all-ceramic restorations, the standard guidelines for the preparation of all-ceramic restorations must be observed. For detailed information, see the brochure "Clinical Aspects of All-Ceramics," No. 1696.



Provisional full arch restoration for a young patient with dentinogenesis imperfecta by means of VITA CAD-Temp crowns for esthetic and functional rehabilitation and correction of the vertical dimension of occlusion.

Clinical treatment: Prof. Dr. D. Edelhoff,
University of Munich.
Laboratory fabrication: J. Schweiger (MDT),
University of Munich.



4-unit temporary anterior bridge,
individualized with VITA VM LC

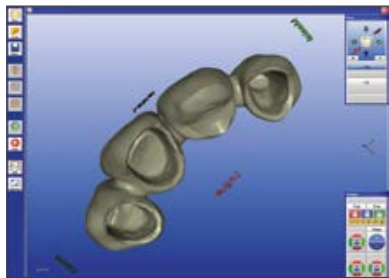
Benefits

- The material is suitable for restorations with a clinical wearing period of up to 3 years.*
- Very high material homogeneity, thanks to the industrial polymerization process. Methyl methacrylate-free composite, hence no irritation of the gingiva and the pulp caused by residual monomers.
- High process reliability ensured by avoiding
 - mixing errors
 - polymerization shrinkage
 - unpleasant smell
 - manual mixing or use of cartridge
- Well-balanced combination of mechanical properties, such as tensile strength and elasticity, for the clinical use and the specific indication.
- High dimensional stability, since the material features considerably higher strength than conventional composite materials.
- Temporary restorations made from VITA CAD-Temp can be removed from the die several times without the risk of fracture.
- Excellent abrasion resistance (see literature).
- No wedging in undercuts as found when using plastic materials.
- No time-consuming removal of excess material.
- No generation of polymerization heat inside the mouth (exothermics).
- No swelling even during extended residence time in the mouth.
- Lasting shade stability and esthetics.
- Natural translucency and fluorescence.
- Radiopaque
- Superior polishing characteristics (low plaque affinity).
- Can be individualized with the light-curing VITA VM LC microparticle composite.
- CAD/CAM manufacturing ensures simple and quick reproducibility of the temporary restoration.
- Outstanding esthetic results and economical in terms of work input.

Functions of temporary restorations made from VITA CAD-Temp

- Prophylactic functions:
 - avoiding the movement of abutment teeth
 - protecting the tooth substance against bacterial, toxic and thermal effects
- Diagnostic and esthetic functions:
 - checking occlusion
 - checking phonetics
 - checking the vertical dimension
 - checking the esthetic result
- Therapeutic functions:
 - gingival forming for controlled papillary growth to be implemented in all-ceramic restorations later on
 - restoring implants during the healing phase
 - correction of temporomandibular joint disorders
 - correction of the occlusal plane

*Clinical study by the University of Tübingen. See references, Hüttig, F., page 15.



Note:

The following geometries or minimum wall thicknesses must be adhered to:

Connector areas:

Anterior bridges

with one pontic 12 mm²

with two pontics 12 mm²

Posterior bridges

with one pontic 12 mm²

with two pontics 16 mm²

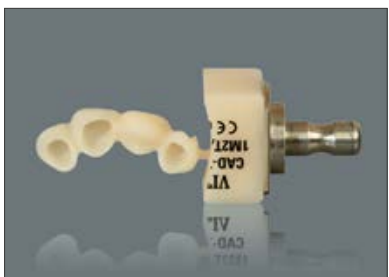
Minimum wall thickness

occlusal: 1.5 mm in the central fissure

circumferential: 0.8 mm



General rule: stability and function should be given priority over esthetics.



Once the grinding / milling process has been completed (CAM), remove the lug using a fine-cut tungsten carbide bur.

If white spots caused by the diamond tools can be seen on the surface after milling, these spots can be easily removed with a tungsten carbide bur without affecting the quality of the product.



Note:

Generally, fine-cut tungsten carbide tools are better suited for processing polymer materials than diamond grinding tools.

For information about recommended milling tools for milling machines, see page 13.





Checking the occlusion / articulation



CAD-Temp long-term temporary restoration on the working model.



Restorations made from VITA CAD-Temp can be prepolished with a suitable silicone polisher and a small goat-hair brush. Standard acrylic polishing agents that are also suitable for intraoral use, such as Dia Glace (Yeti), Opal polishing paste (Renfert), Dental Diamond Stick (Shofu) and Prisma Gloss (Dentsply), are used for high gloss polishing.

Avoid generating excessive heat.

⚠ Important:

Careful polishing is absolutely necessary to achieve an ideal result and avoid accumulation of plaque and the related adverse effects on the shade.



Completed temporary bridge restoration on the working model.



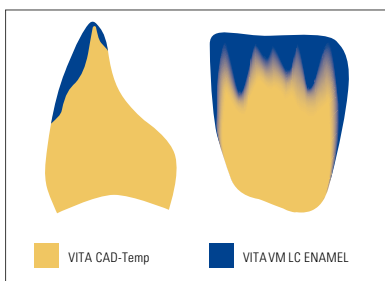
To achieve enhanced an esthetic appearance, the shade of long-term temporary restorations made from VITA CAD-Temp can be individualized with the light-curing microparticle composite VITA VM LC flow or paste, especially in the translucent incisal area of anterior restorations or in the vestibular area of posterior restorations. Excellent results can be achieved even with thin layers of VITA VM LC. The VITA VM LC CREATIVE KIT flow Edition, Prod. No. CVLCFCK, is available for individualization. Please observe the information in the Working Instructions VITA VM LC, No. 1200E.



When using the cut-back technique, controlled grinding or reducing of border areas using a cross-cut carbide bur is the precondition for a smooth transition between the VITA CAD-Temp temporary restoration and the light-curing microparticle composite VITA VM LC.



To achieve reliable bonding between VITA CAD-Temp and VITA VM LC paste / VITA VM LC flow, the surface is sandblasted with aluminium oxide (grit size 50 µm) at a pressure of 2 bar.



⚠ Important:

Maximum reduction of VITA CAD-Temp to ensure sufficient stability of the VITA VM LC temporary restoration:

Incisal area of temporary anterior restorations: max. 0.5 mm.

Vestibular area of posterior temporary restoration: max. 0.3 mm.



The sandblasted surface must be carefully cleaned with compressed air (with water separator) or a dry clean brush and wetted with VITA VM LC MODELLING LIQUID to achieve reliable bonding. Allow MODELLING LIQUID to take effect for 30 to max. 60 seconds.

Layering-over is easier if the shaping instrument is moistened with a small quantity of VITA VM LC MODELLING LIQUID. Use sparingly.



⚠ Important:

The liquid must not be used to thin the materials.

VITA VM LC Modelling Liquid is a hazardous material.

Relevant information can be found on page 15.



Characterizing the shade with VITA VM LC Paint

Depending on which type of individualization is to be achieved, the suitable shade is applied: Ten different VITA VM LC PAINT materials are available for this purpose. These materials can be mixed with VITA VM LC flow WINDOW. For fixation of the materials, intermediate polymerization is required.

For information on polymerization and polymerization times, refer to the Working Instructions for VITA VM LC, No. 1200E.

⚠ Important:

VITA VM LC PAINT must not be on the surface and must be completely coated with dentine, enamel or flow WINDOW materials.

When applying the materials, air inclusions must be avoided.



Apply a small quantity of ENAMEL, EFFECT ENAMEL, WINDOW or NEUTRAL in the upper third of the veneer surface (translucent or vestibular area). Intermediate polymerization can be carried out at any time during layering.

Then perform final polymerization: To prevent formation of an inhibition layer and facilitate finishing, we recommend the use of VITA VM LC GEL during final polymerization. Apply a coat of gel directly from the syringe to cover the entire veneer surface or use an instrument to apply the gel. Perform final polymerization.

Then completely remove VITA VM LC GEL using running water.



Polymerization

Information on polymerization and a list of suitable polymerization units can be found in the Working Instructions for VITA VM LC (No. 1200).

Fine-cut carbide burs must be used for all corrections of contours during individualization.



Polishing

Then prepolishing is carried out using a suitable silicone polisher, for example, from the VITA ENAMIC Polishing Set technical, and a small goat-hair brush. A polishing material for veneering composites and a cotton/leather buff or a felt wheel are used for high-gloss polishing. Avoid generating excessive heat.

Note:

Careful polymerization and polishing are essential requirements to obtain an ideal result and avoid the formation of deposits and resulting adverse effects on the shade.



Leaving the completed restoration in the ultrasonic unit over an extended period may affect the quality of the material or bonding of VITA VM LC to VITA CAD-Temp.

We recommend a short residence time of approx. 1 minute.

Content of the alkaline cleaning solution: max. 10%
Temperature: max. 40°C.

Note:

Cleaning with steam results in heat and compressive stress and must generally be avoided.



Completed VITA CAD-Temp monoColor temporary bridge individualized with VITA VM LC / VITA VM LC flow on the working model.





VMK bridge 12-22 prior to the fabrication of the restoration.



Preparation after removal of the VMK bridge.



Digital shade measurement with VITA Easyshade.



Shade taking with shade tabs of the VITA SYSTEM 3D-MASTER Toothguide.



Luting

Basically, all provisional cements/bonding materials are suitable. Translucent materials achieve improved esthetics. If the definitive restoration is to be cemented adhesively, eugenol-free cementing materials must be used. Please observe the processing instructions and indications of the respective manufacturers.

Regular checkups and recalls are required for long-term temporary restorations (period of wearing of more than 4 weeks) in order to cement the restoration again if required.

Pretreatment of VITA CAD-Temp restorations prior to bonding

Sandblast the inner surfaces of the restoration with Al_2O_3 (50-100 μm , pressure of 1–2 bar) or roughen with a coarse diamond bur.



Temporary restoration being seated.



Removal of excess material.



Temporary bridge made from VITA CAD-Temp monoColor on teeth 12-22.



The final result is esthetically pleasing.

Recommended materials

- Texture marker, (SW-Dental)
- Veneering material (C&B material) for individualization:
VITA VM LC CREATIVE KIT flow Edition, VITA Prod. No. CVLCFCK
- Fine and coarse cross-cut carbide burs for manual adjustments
- Polishing materials, also for direct use
e.g. Dia Glace (Yeti)
Opal polishing paste (Renfert)
Dental Diamond Stick (Shofu)
Prisma Gloss (Dentsply)
- Cementing materials to be used for cementing
provisional acrylate-based materials.

⚠ Note:

Please observe the instructions for use and indications of the manufacturers of the products mentioned.

Recommended tools for the milling machine

- The correct tool is essential for achieving high-quality and economically optimized final results. Diamond-coated solid carbide milling tools, preferably spherically-shaped ones, are recommended for machining VITA CAD-Temp. Ideally, the coating thickness is 4-5 µm.


Recommendation:

- For processing VITA CAD-Temp, the same tools can be used as for processing presintered zirconia.

⚠ Note:

*The standard milling tools for PMMA are mostly uncoated solid carbide milling tools and therefore **not suitable** for processing VITA CAD-Temp **since this material contains fillers (composite)**.*

Uncoated milling tools will become blunt after a few restorations and can no longer be used. A blunt tool produces more friction heat so that the polymer melts and the milling tool is clogged. Fracture of milling tools and defective restorations will result.

	Designation	Size Pieces per pack	Shades	Standard pack	Large pack	Special features
VITA CAD-Temp monoColor	CT-40	15.5 x 19 x 39 mm 2/10 pieces	0M1T 	EC40M1TCT402	EC40M1TCT4010	Holder
			1M2T 	EC41M2TCT402	EC41M2TCT4010	Holder
			2M2T 	EC42M2TCT402	EC42M2TCT4010	Holder
			3M2T 	EC43M2TCT402	EC43M2TCT4010	Holder
	CT-55	15.5 x 19 x 55 mm 1 unit	1M2T 	EC41M2TCT551	–	Holder
			2M2T 	EC42M2TCT551	–	Holder
			3M2T 	EC43M2TCT551	–	Holder
	CT-DISC for KaVo Everest	Ø 100 x 20 mm 1 unit	1M2T 	ECK1M2T1001	–	RFID-Code
			2M2T 	ECK2M2T1001	–	RFID-Code
			3M2T 	ECK3M2T1001	–	RFID-Code
	CT-DISC	Ø 98.4 x 20 mm 1 unit	1M2T 	EC1M2TD98201	–	circumferential groove
			2M2T 	EC2M2TD98201	–	circumferential groove
3M2T 			EC3M2TD98201	–	circumferential groove	
VITA CAD-Temp multiColor	CTM-40	15.5 x 19 x 39 mm 2/10 pieces	1M2T 	EC41M2TM402	EC41M2TM4010	Holder
			2M2T 	EC42M2TM402	EC42M2TM4010	Holder
			3M2T 	EC43M2TM402	EC43M2TM4010	Holder
	CTM-85/40	18 x 40 x 85 mm 1 unit	1M2T 	EC41M2TM85401	–	Holder
			2M2T 	EC42M2TM85401	–	Holder
			3M2T 	EC43M2TM85401	–	Holder
	CTM-DISC	Ø 98.4 x 18 mm 1 unit	1M2T 	EC1M2TMD98181	–	circumferential groove
			2M2T 	EC2M2TMD98181	–	circumferential groove
			3M2T 	EC3M2TMD98181	–	circumferential groove





VITAVM®LC CREATIVE KIT flow Edition


Prod. No. CVLCFCK


For layering over CAD-Temp and for individualizing VITA acrylic teeth.

Quantity	Content	Material
4	2 g	VITA VM LC PAINT PT1, PT5, PT15, PT17
1	3 g	VITA VM LC flow WINDOW WIN
2	3 g	VITA VM LC flow EFFECT ENAMEL EE6, EE9
1	4 g	VITA VM LC flow NEUTRAL NT
1	4 g	VITA VM LC flow ENAMEL ENL
1	10 ml	VITA VM LC MODELLING LIQUID
1	5 ml	VITA VM LC GEL
1	–	Brush No. E 0 stain brush
1	–	Working instructions

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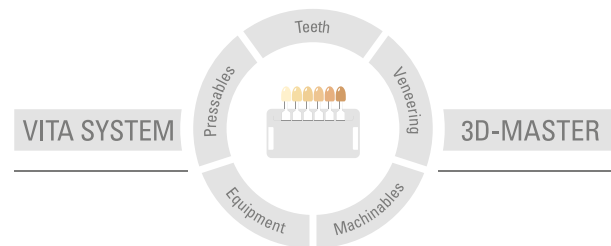
The following products require hazard identification:		
<p>VITAVM_®LC MODELLING LIQUID (contains triethylene glycol dimethacrylate, 2-dimethylaminoethyl methacrylate)</p>	<p>Causes skin irritation. Causes severe eye irritation. May cause respiratory irritation. May cause allergic skin reactions.</p>	
<p>VITAVM_®LC BASE DENTINE, ENAMEL, EFFECT ENAMEL, NEUTRAL, GINGIVA (pastes) (contains 2-dimethylaminoethyl methacrylate, triethylene glycol dimethacrylate)</p>	<p>Causes skin irritation. Causes severe eye irritation. May cause allergic skin reactions.</p>	
<p>VITAVM_®LC flow (contains triethylene glycol dimethacrylate, 2-dimethylaminoethyl methacrylate)</p>	<p>Causes skin irritation. Causes severe eye irritation. May cause allergic skin reactions. Harmful to aquatic organisms with long-term adverse effects.</p>	
<p>VITAVM_®LC PAINT (contains 2-dimethylaminoethyl methacrylate, triethylene glycol dimethacrylate)</p>	<p>Causes skin irritation. Causes severe eye irritation. May cause allergic skin reactions. Harmful to aquatic organisms with long-term adverse effects.</p>	

Protective clothing	While work is in progress, wear suitable safety goggles/ face protection, gloves and safety clothing. In case of formation of dust, use an extraction system or wear a face mask.	
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The corresponding safety data sheets can be downloaded at www.vita-zahnfabrik.com/sds.



With the unique VITA SYSTEM 3D-MASTER, all natural tooth shades can be systematically determined and perfectly reproduced.



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. Furthermore, our liability for the accuracy of this information is independent of the legal basis and, in as far as legally permissible, shall always be limited to the value as invoiced of the goods supplied, excluding value-added tax. In particular, as far as legally permissible, we do not assume any liability for loss of earnings, indirect damages, ensuing damages or for third-party claims 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 this product information: 03.18

After the publication of this information for use any previous versions become obsolete. The current version can be found at www.vita-zahnfabrik.com

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

VITA CAD-Temp® · VITAVM₀LC · VITAVM₀LC flow

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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
 facebook.com/vita.zahnfabrik