

VITA CAD-Temp®

Working Instructions



VITA shade taking

VITA shade communication

VITA shade reproduction

VITA shade control

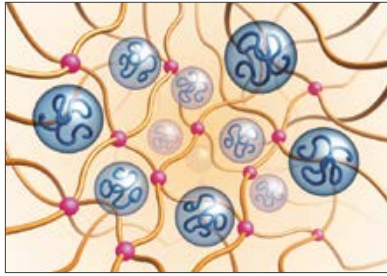
Date of issue: 11.14




VITA shade, VITA made.

VITA

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

| | |
|--------------------------------------|-------|
| Material and processing requirements | 3 |
| Material information | 4 |
| Processing | 5 |
| Polishing | 6 |
| Individualizing the shade | 7-9 |
| Cleaning | 10 |
| Clinical aspects | 11-12 |
| Recommended tools and materials | 13 |
| Pack sizes and assortments | 14 |
| Safety information | 15 |



-  PMMA pearls, swollen by monomer
-  cross-linked monomer
-  inorganic microparticle filler material incorporated 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 of elasticity | 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 | 1M2TM | 2M2TM | 3M2TM | |
| |  |  |  | |

* 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 familiar 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

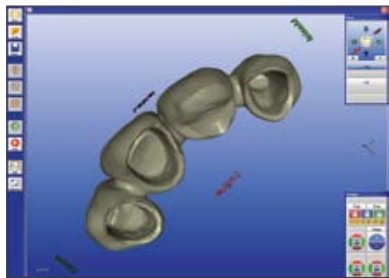
Benefits

- 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 a 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 (hence 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
 - protection of 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. Publication forthcoming.



⚠ 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

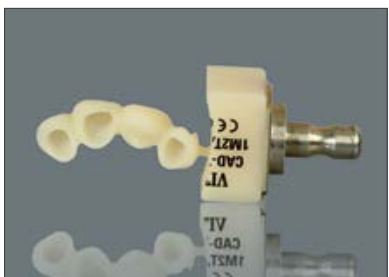
Minimum wall thickness

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, which were 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 a perfect 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 esthetic appearance, the shade of temporary restorations made from VITA CAD-Temp can be individualized with the light-curing microparticle composite VITA VM LC 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, Prod. No. CVLCCK, is available for individualization.

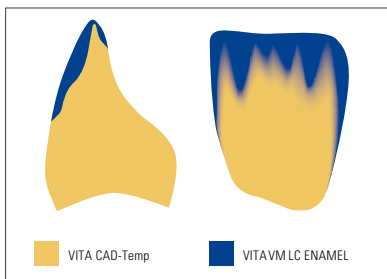
Please observe the information in the Working Instructions VITA VM LC, No. 1200E.



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



To ensure reliable bonding of VITA CAD-Temp and VITA VM LC, fine-cut tungsten carbide burs should be used.



⚠ 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 temporary anterior restorations: max. 0.3 mm.



The ground surface must be carefully cleaned and wetted with VITA VM LC MODELLING LIQUID to achieve reliable bonding to the VITA CAD-Temp base material.



Individualizing is easier if a small quantity of VITA VM LC MODELLING LIQUID is added onto the modelling instrument. 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 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. 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 or enamel materials.

When applying the materials, air inclusions must be avoided.



Note:

The total layer thickness of the restoration individualized with VITA VM LC should not be more than 0.5 mm for anterior restorations and 0.3 mm for posterior restorations to ensure sufficient stability of the temporary restoration.



Apply a small quantity of VITA VM LC ENAMEL, EFFECT ENAMEL or NEUTRAL in the upper third of the veneer surface (translucent or vestibular area). Then final polymerization is carried out.

Polymerization

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

Intermediate polymerization can be carried out at any time during layering.



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

Important:

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

When applying the materials, air inclusions must be avoided.



Polishing

Note:

Careful polymerization and polishing are essential requirements to obtain a perfect 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 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.



Application of the temporary adhesive cement.



Temporary restoration being seated.



Removal of excess material.



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

Basically, all provisional cements/adhesive materials are suitable. Translucent materials allow to achieve improved esthetics. If the definitive restoration is to be cemented adhesively, eugenol-free cementing materials must be used.

See page 13, Recommended materials and tools.

Please observe the processing instructions and indications of the respective manufacturers.



The final result is esthetically pleasing.

Recommended materials

- Texture marker, (SW-Dental)
- Veneering material (C&B material) for individualization:
VITA VM LC CREATIVE KIT, VITA Prod. No. CVLCCK
- Fine and coarse cross-cut carbide tungsten carbide burs for manual adjustments
- Polishing materials, also for intraoral 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 listed above.

Recommended tools for the milling machine

- The correct tool is essential to achieve 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 feature |
|--|-----------------------------|----------------------------------|---|---------------|------------------------|------------------------|
| 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 piece | 1M2T  | EC41M2TCT551 | – | Holder |
| | | | 2M2T  | EC42M2TCT551 | – | Holder |
| | | | 3M2T  | EC43M2TCT551 | – | Holder |
| | CT-DISC for KaVo Everest | Ø 100 x 20 mm 1 piece | 1M2T  | ECK1M2T1001 | – | RFID-Code |
| | | | 2M2T  | ECK2M2T1001 | – | RFID-Code |
| | | | 3M2T  | ECK3M2T1001 | – | RFID-Code |
| | CT-DISC | Ø 98 x 20 mm 1 piece | 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 | 1M2TM  | EC41M2TM402 | EC41M2TM4010 | Holder |
| | | | 2M2TM  | EC42M2TM402 | EC42M2TM4010 | Holder |
| | | | 3M2TM  | EC43M2TM402 | EC43M2TM4010 | Holder |
| | CTM-85/40 | 18 x 40 x 85 mm 1 piece | 1M2TM  | EC41M2TM85401 | – | Holder |
| | | | 2M2TM  | EC42M2TM85401 | – | Holder |
| | | | 3M2TM  | EC43M2TM85401 | – | Holder |
| | CTM-DISC | Ø 98 x 18 mm 1 piece | 1M2T  | EC1M2TMD98181 | – | circumferential groove |
| | | | 2M2T  | EC2M2TMD98181 | – | circumferential groove |
| | | | 3M2T  | EC3M2TMD98181 | – | circumferential groove |





VITAVM®LC CREATIVE KIT

Prod. No. CVLCCK

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

| Quantity | Content | Material |
|----------|---------|----------------------------------|
| 4 | 2 g | PAINT PT1, PT5, PT15, PT17 |
| 1 | 2 g | WINDOW WIN |
| 2 | 4 g | EFFECT ENAMEL EE6, EE9 |
| 1 | 4 g | NEUTRAL NT |
| 1 | 4 g | ENAMEL ENL |
| 1 | 10 ml | MODELLING LIQUID |
| 1 | – | Brush holder |
| 1 | pack | Disposable brush tips, 10 pieces |
| 1 | – | Working Instructions |

VITAVM®LC MODELLING LIQUID



Irritant

Causes skin irritation.

Causes severe eye irritation.

May irritate the respiratory tract.

May cause allergic skin reactions.

Storage information: Do not store above 25°C.

Do not expose to direct sunlight.

The respective safety data sheet can be downloaded from www.vita-zahnfabrik.com or requested by fax from (+49) 7761-562-233.

When working with the product, wear suitable safety goggles/face protection, gloves and safety clothing. Work under an extraction unit.

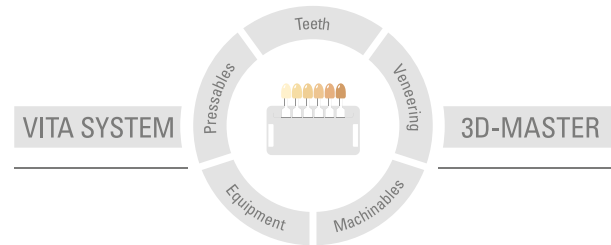


Literature

Arnetzl, G.V.; Arnetzl, G.: Adhäsivtechnik und fräßbare Hochleistungspolymer-Restaurationen: Amelogenesis Imperfecta im Wechselgebiss, *Int J Comput Dent* (2011); 14:129-138
 Balkenhol, M.: Klinisch relevante Aspekte der temporären Versorgung präparierter Zähne; *Quintessenz* (2009); 60(9):1011-1020
 Baltzer, A; Kaufmann-Jinoian, V.: Ästhetisches Interim; *Dental Magazin* (2008); 3:76-79
 Baltzer, A; Kaufmann-Jinoian, V.: Die neue Welt der Zahnmedizin; *Teamwork* (2008) 2:86-91
 Creutzfeldt, H.: Ein Kompositmaterial für CAD/CAM-gefertigte, metallfreie Langzeitprovisorien; *Quintessenz Zahntech* (2007); 33(39):348-352
 Edelhoff, D.; Güth, J.-F. et al: Vorbehandlung komplexer Fälle in der festsitzenden Prothetik, neue Materialien und Konzepte; *Stomatologie* (2011); 108:1-8
 Edelhoff, D.; Brix, O.: Rehabilitation eines Patienten mit Dentinogenesis imperfecta; *ZM* (2010); 100, Nr. 4 A:26-37
 Edelhoff, D.; Schweiger, J. et al: CAD/CAM-generierte Restaurationen aus Hochleistungspolymer zur Vorbehandlung komplexer Fälle; *Quintessenz* (2011); 62(5):625-635
 Fischer, C.: Langzeitprovisorien für den Frontzahnbereich; *Quintessenz Zahntech* (2008); 34(3):676-681
 Ganz, S.: Langzeitprovisorien – individuell und ästhetisch; *Dental Labor* (2009); 8:1068-1071
 Gonschorrek, M.: Erstellung von Langzeitprovisorien mit Chairside-CAD/CAM; *ZWP* (2008) 6:84-87
 Götte, H.; Leissing, M.: Abdruckfreie Praxis; *Dental Magazin* (2008); 1:54-57

Heinloth, F.; Heinloth, B.: Langzeitprovisorien bei Implantantversorgungen; *Zahntech Mag* 2009, 7/8:426-430
 Kobus, B.; Haschemi, F.: Das neue Lächeln Probe tragen!; *Dental dialogue* (2008); 9:36-40
 Loos, H.: Chairside-Fertigung einer Interimsbrücke. *Digital Dental News* (2013); 6:30-34
 Maier, B.: Hochleistungspolymere - Werkstoffe mit Potenzial; *Zahntech Mag* (2011); 15, 7/8:410-420
 Mohrenschildt, S.: Untersuchung zur Bruchfestigkeit von CAD/CAM-gefertigten Seitenzahnbrücken aus Hochleistungspolymer-Kunststoffen: Eine In-vitro-Untersuchung. *Zahnmed Diss, München* 2009
 Preissner, S. et al: A noninvasive treatment of amelogenesis imperfecta; *Quintessence Int* (2013); 44:303-305 *Zahnmed Diss, München* 2009
 Stawarczyk, B.; Sailer I. et al: Quo vadis Provi?; *Dental dialogue* (2009); 10:30-48
 Stawarczyk, B.; Ender, A: Einfluss der künstlichen Alterung auf die Bruchlast konventionell oder mittels CAD/CAM hergestellter Brücken-Provisorien; *Quintessenz Zahntech* (2009); 35(3):320-328
 Stawarczyk, B. et al: Abrasionsbeständigkeit von Provisorien – Kunststoffen; *Quintessenz Zahntech* 2010; 36(7); 954 – 962
 Werling, G.: CAD/CAM-gestützte Fertigung von Kunststoffprovisorien und Brückengerüsten aus Zirkonoxid aus einem Datensatz; *Digital Dental News* (2008); 2:26-32
 Werling, G., Kern, M.: Provisorium digital aus Kunststoff gefräst; *Die Zahnarzt Woche* (2009); 26:12-14

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 application. 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 information: 11.14

After the publication of these 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 **CE** 0124 :

VITA CAD-Temp®

VITAVM_{LC}

We would like to express our gratitude to Mr. Kurt Reichel (Master Dental Technician) from Hermeskeil and Dr. Andreas Kurbad from Viersen for their cooperation and supply of illustrative material for the preparation of these working instructions.

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](https://www.facebook.com/vita.zahnfabrik)