

VITAVM® LC

Complement to the Working Instructions VITA VM LC



Video tutorials with Jürgen Freitag including processing tips are available at www.vita-zahnfabrik.com

VITA shade determination

VITA shade communication

VITA shade reproduction

VITA shade control

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VITA shade, VITA made.

VITA

VITA VM LC flow
VITA VM LC extended application range

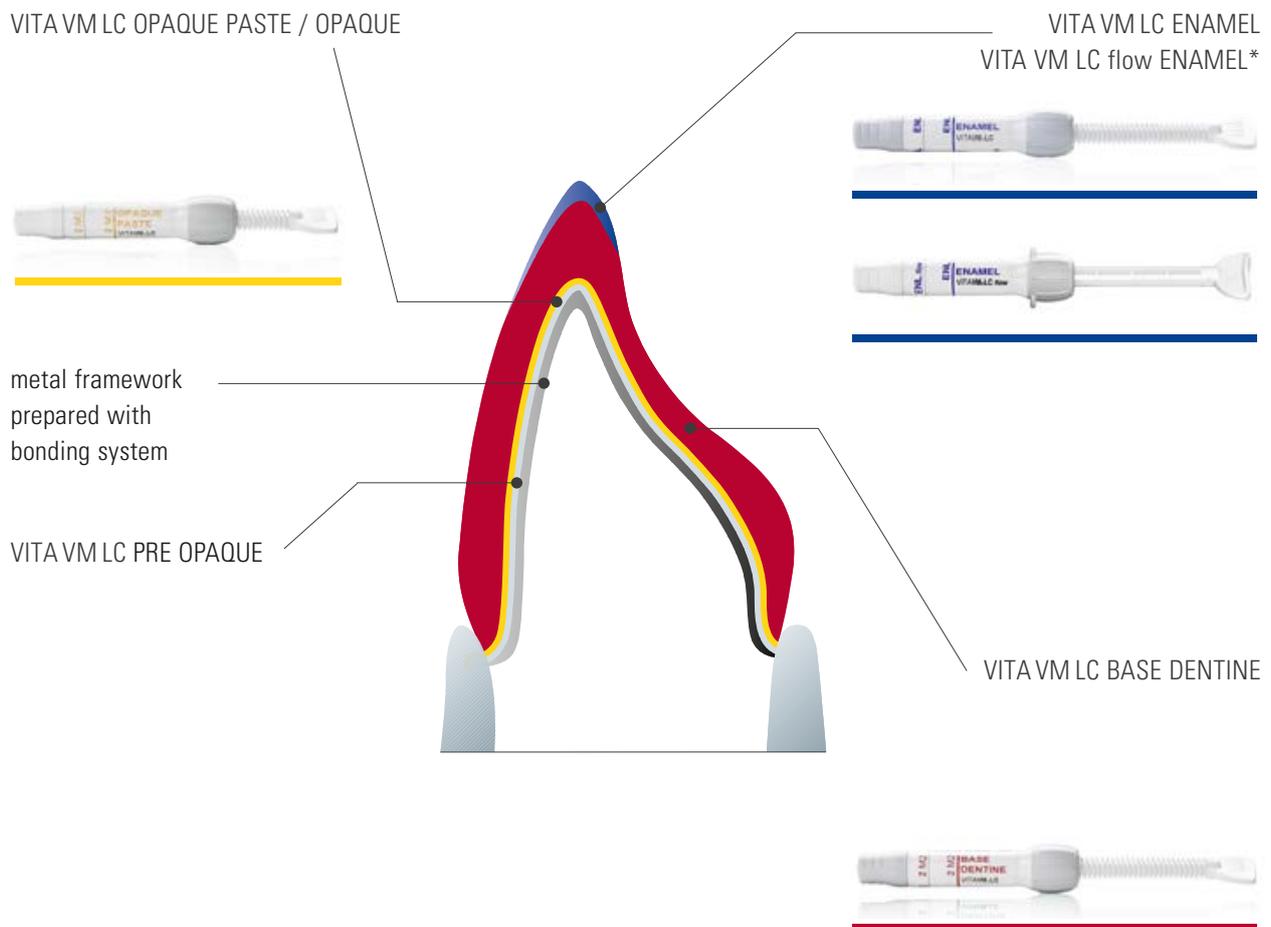
VITA VM LC flow

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VITA VM LC flow materials are low-viscosity materials that can be used together with VITA VM LC pastes such as BASE DENTINE.

Application areas

- for layering on VITA VM LC BASE DENTINE materials (polymerized/non-polymerized)
- for individualization of VITA acrylic teeth, VITA CAD-Temp and VITA ENAMIC
- individualization of VITA VM CC restorations
- characterization of dentures
- reproduction of gingival components in the case of implant restorations



After applying PRE OPAQUE, OPAQUE / OPAQUE PASTE, VITA VM LC BASIC layering consists of the application of BASE DENTINE and ENAMEL/ENAMEL flow.

*ENAMEL flow materials can be applied more generously than ENAMEL paste materials. This can be attributed to the new filler composition of the VITA VM LC flow materials.



Preparation and conditioning of frameworks as well as application of opaquer, see the VITA VM LC working instructions (No. 1200E), pages 8-12.

A framework for veneering prepared using VITA VM LC OPAQUE PASTE or OPAQUE.

To facilitate layering, separate the plaster on the model using VITA VM LC SEPARATOR.

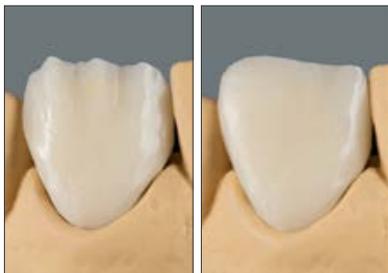


If space is at a premium or in the case of chromatic tooth shades, the use of flow Chroma Plus materials is recommended.

Application can be carried out cervically or across the entire surface.

Then set by curing briefly.

Observe the information on polymerization provided on pages 26/27 (No. 1200E).



Layer the BASE DENTINE paste in a reduced tooth shape and where required, set all veneered surfaces by curing briefly.

Alternative:

Perform fully anatomical layering, and carry out intermediate polymerization followed by cut-back.

Then clean the veneer surface (brush/pressurized air) and coat with VITA VM LC MODELLING LIQUID.



Build up the tooth using ENAMEL flow and / or EFFECT ENAMEL flow.

Then set by curing briefly.



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 that covers the entire veneer surface but is not too thick.

Perform final polymerization.

Then completely remove VITA VM LC GEL using running water.



Finishing is carried out using fine-cut carbide milling tools (for the maximum speed for composite, refer to the manufacturer's specifications)
Minor corrections and finishing work can also be done using a fine diamond instrument (marked with red ring, grit size 27 - 76 µm).

Prepolishing using a suitable silicone polisher and a small goat-hair brush.



High-gloss polishing using a polishing material for veneering composites and a wool/leather buff or a felt wheel.

Avoid generating excess heat (for the maximum polisher speed, refer to the manufacturer's specifications)

The finalized veneer.

Cleaning in the ultrasonic unit

Length of time in the ultrasonic unit: approx. 1 min.
Percentage of alkaline cleaning solution: max. 10%.
Temperature: max. 40°C.

Please note:

- Leaving the restoration in the ultrasonic unit for an excessive length of time may affect the quality of the material.
- Steam cleaning results in the development of extreme levels of heat and pressure and is therefore generally to be avoided.



Corrections of the shape

during layering,

after intermediate or final polymerization are carried out using fine-cut carbide milling tools; milling particles are carefully removed.
Then coat the surface using VITA VM LC MODELLING LIQUID.

After polishing:

Roughen the surface using a fine-cut carbide milling tool and thoroughly remove any dust from milling.
Coat the fully-dry surface with VITA VM LC MODELLING LIQUID and then perform corrections. Complete as described.



Preparation and conditioning of frameworks as well as application of opaque, see the VITA VM LC working instructions (No. 1200E), pages 8-12.

To facilitate layering, separate the plaster on the model using VITA VM LC SEPARATOR.

Apply CHROMA PLUS flow CP2:

- Cervical
- Mesial/distal ridges

Set by curing briefly.

Observe the information on polymerization provided on pages 26/27 (No. 1200E).



Apply CHROMA PLUS flow CP3 in the central area.

Layer the mamelons using CP1 (mesially / distally) and CP3 (centrally)

If required, set by curing briefly.



Layer the BASE DENTINE paste 2M2 in a reduced tooth shape.

To do so, apply larger amounts of BASE DENTINE.

If required, set all veneered surfaces by curing briefly.

Alternatively, perform fully anatomical layering of BASE DENTINE, and carry out intermediate polymerization followed by cut-back.



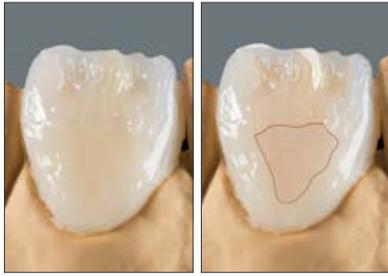
Apply ENAMEL flow ENL distally and mesially in the incisal edge area, as well as centrally in the upper third of the veneering surface.

If required, set by curing briefly.



Layer EFFECT ENAMEL flow EE 9 in the mesial, distal and incisal area.

If required, set by curing briefly.



Layering EFFECT ENAMEL flow
EE1 – incisal
EE5 – upper half
and EE6 – lower half

If required, set by curing briefly.



Completion of the tooth shape using WINDOW flow.

Then set all veneered surfaces by curing briefly.

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 that covers the entire veneer surface but is not too thick.

Perform final polymerization.

Then completely remove VITA VM LC GEL using running water.

Finishing and polishing: see basic layering on page 5.



The finalized individual veneer.

For information on cleaning and correction, see page 5.

Individualization of VITA acrylic teeth, VITA CAD-Temp, VITA VM CC restorations, reproduction of gingival components and individualization of dentures using VITA VM LC GINGIVA flow

- In order to ensure a secure bond between VITA VM LC flow and the acrylic or composite to be individualized, the affected surfaces must be milled using a fine-cut carbide milling tool. Transition areas must be adequately milled!
- The milled surface must be cleaned carefully and coated with VITA VM LC MODELLING LIQUID in order to facilitate a secure bond with the base material.
- Depending on the type of individualization to be achieved, the appropriate Effect material is inserted / used; there are a variety of VITA VM LC flow materials available for this purpose.
To set the materials, cure briefly.
- 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 that covers the entire veneer surface but is not too thick.
- Then perform final polymerization and finishing as described for basic layering (page 4/5).
- Then completely remove VITA VM LC GEL using running water.

Reproduction of gingival components using metal retentions

In the case of gingival reproduction with metal retentions, first coat the metal with primer and with gingival opaquer (for details of how to apply primer and opaquer, see the VITA VM LC working instructions, 1200E).
Then layer the Gingiva and/or Gingiva flow materials in accordance with the procedure described above.

In the case of thin GINGIVA/GINGIVA flow layers, a mixture of GINGIVA OPAQUE PASTE GOL and PAINT is recommended for the GINGIVA shades G1, G4 and G5.
A higher content of GINGIVA OPAQUE PASTE GOL is required in the mixture.

| GINGIVA | Mixture GINGIVA OPAQUE PASTE GOL / PAINT |
|----------------|---|
| GINGIVA G1 | GOL / PT 13* |
| GINGIVA G4 | GOL / PT 19* |
| GINGIVA G5 | GOL / PT 15* |

* Mixing ratio 2:1 (two parts of GOL, 1 part of PT)
The information given is only intended to provide reference values.

The classifications are only intended to provide reference values.

| VITA SYSTEM 3D-MASTER | CHROMA PLUS |
|-----------------------|-------------|
| 0M1 | – |
| 1M1 | CP1/CP2* |
| 1M2 | CP2 |
| 2L1.5 | CP2 |
| 2L2.5 | CP2 |
| 2M1 | CP2 |
| 2M2 | CP1/CP3* |
| 2M3 | CP3 |
| 2R1.5 | CP1/CP5* |
| 2R2.5 | CP1/CP3* |
| 3L1.5 | CP2/CP5* |
| 3L2.5 | CP3 |
| 3M1 | CP1/CP5* |
| 3M2 | CP3/CP5* |
| 3M3 | CP3/CP4* |
| 3R1.5 | CP4/CP5* |
| 3R2.5 | CP4/CP5* |
| 4L1.5 | CP5 |
| 4L2.5 | CP4/CP5* |
| 4M1 | CP5 |
| 4M2 | CP3/CP5* |
| 4R1.5 | CP5 |
| 4R2.5 | CP4 |
| 5M1 | – |
| 5M2 | – |
| 5M3 | – |

| VITA classical A1–D4 shades | CHROMA PLUS |
|-----------------------------|-------------|
| A1 | CP1 |
| A2 | CP2 |
| A3 | CP2/CP3* |
| A3.5 | CP3 |
| A4 | CP4/CP5* |
| B2 | CP2 |
| B3 | CP2/CP3* |
| B4 | CP3 |
| C1 | CP1/CP5* |
| C2 | CP1/CP5* |
| C3 | CP1/CP5* |
| C4 | CP5 |
| D2 | CP2 |
| D3 | CP2/CP5* |
| D4 | CP2/CP5* |

* Mixing ratio approx. 1:1

When mixing CHROMA PLUS flow materials, ensure that air bubbles are not created.

| | | | |
|---|------|---|-----------------------|
| ENAMEL – translucent enamel materials | ENL | | light |
| | END | | dark |
| NEUTRAL – universal translucent material | NT | | translucent |
| WINDOW – transparent material, for crystal-clear effects in the enamel area – for mixing and layering of VITA VM LC PAINT stains on VITA VM LC, VITA acrylic teeth and VITA CAD-Temp – for mixing the VITA VM LC flow materials – for coating the finished veneer and for covering fissures | WIN | | transparent |
| CHROMA PLUS – shade-intensive materials. The intensity can be controlled through the thickness of the layer. – to be applied in the tooth-neck area or across the entire surface of the opaquer – stronger fluorescent effect – is suitable as a correction material, depending on the shade | CP1 |  | ivory |
| | CP2 |  | beige-yellow |
| | CP3 |  | light orange-brown |
| | CP4 |  | orange |
| | CP5 |  | green-brown |
| EFFECT ENAMEL – translucent enamel effect material for all enamel areas – to achieve a natural effect of depth | EE1 |  | whitish |
| | EE2 |  | pastel |
| | EE5 |  | yellowish-translucent |
| | EE6 |  | reddish-translucent |
| | EE7 |  | orange-translucent |
| | EE9 |  | bluish-translucent |
| | EE11 |  | greyish-translucent |
| | EE12 |  | grey-beige |
| GINGIVA – to restore the original gingival situation *when a layer thickness of 1 mm is reached, final polymerization is required | G1 |  | dusky pink |
| | G2 |  | orange-pink |
| | G3 |  | pink |
| | G4 |  | brown-red |
| | G5* |  | dark red |

The VITA VM LC flow materials can be mixed with one another. Moreover, the VITA VM LC flow materials can be shaded by combining with VITA VM LC PAINT materials. In order to prevent bubbles during mixing, an instrument should be used for mixing rather than a brush.

The current application range of VITA VM LC is extended by adding the following

- Individualization of and layering on VITA ENAMIC
- Veneering of removable and partially removable dentures (according to the manufacturer's information) made from polyether ether ketone (PEEK) with a ceramic filler content of up to 20 %, such as Bio HPP/bredent
- PEEK-OPTIMA[®] LT1 polymer, such as. Juvora, InnoBlanc Medical

VITAVM[®]LC individualization and veneering of VITA ENAMIC[®]

The cut-back is carried out using CAD software or manually as a preparatory step for individualizing or veneering. The following minimum layer thicknesses for ENAMIC must be adhered to.

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

Conditioning the surface

- The surface of the VITA ENAMIC restoration to be individualized must be roughened and oil-free to ensure perfect bonding to the composite.
- Adhesion of residue such as milling liquid or lubricant (such as Dentatec) to the surface is not permitted. Remove these either by spraying off or using an ultrasonic bath.
- The level of surface roughness immediately following CAM processing is sufficient for individualization.

If subsequent reworking of the surface has reduced the level of roughness, the following three alternative methods can be used to increase roughness again:



1. Roughening with a diamond bur.
2. Sandblasting using Al₂O₃ at max. 50 µm and a blasting pressure of max. 1 bar.
3. Extraorally only (!): etching with a 5% hydrofluoric acid gel such as VITA CERAMICS ETCH as follows:

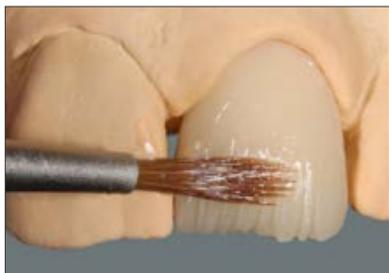
Using a small disposable brush, apply VITA CERAMICS ETCH to the surfaces to be etched.

Etching time: 60 sec. Once the application time has come to an end, completely remove any residual acid from the etched surface by rinsing off with copious amounts of water, by cleaning thoroughly using a steam jet device, or by cleaning in an oil-free ultrasonic bath using distilled water.

Do not brush off, as this would lead to significant surface contamination.

- Surfaces sandblasted with Al₂O₃ must also be cleaned thoroughly.
- After cleaning, the surface should no longer be touched.





- Apply silane solution, e.g. VITASIL, to the roughened surface.
- Apply VITA VM LC MODELLING LIQUID.



Application of VITA VM LC or VITA VM LC flow

Restoration prepared for individualization.



Incorporating incisal translucent effects, with e.g. EFFECT ENAMEL flow EE9 and EE2. If required, set by curing briefly.



Layering mamelons with e.g. EFFECT ENAMEL flow EE2 and EE5. If required, set by curing briefly.



Building up the tooth shape using ENAMEL flow and / or EFFECT ENAMEL flow.



Option: Coating the entire crown with WINDOW flow.

All veneered surfaces are set by curing briefly.



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 that covers the entire veneer surface but is not too thick.

Perform final polymerization.

Then completely remove VITA VM LC GEL using running water.

Finishing and polishing: see basic layering on page 4. The restoration is finished with a fine diamond instrument (marked with red ring, grit size 27 - 76 µm).

Note: VITA ENAMIC must not be milled with carbide milling tools.

Then the instruments of the VITA ENAMIC polishing set technical are used for pre- and high-gloss polishing.



The completed ENAMIC restoration veneered with VITA VM LC flow.

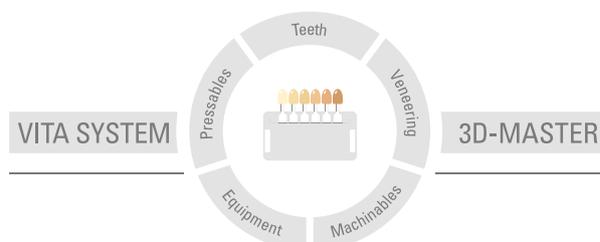
For information on cleaning and correction, see page 4.

- The restoration is fabricated and the surfaces are prepared in accordance with the instructions of the corresponding PEEK manufacturer.
- To achieve optimal bonding of VITA VM LC to polyether ether ketone (PEEK) with a filler content of up to 20 % and PEEK OPTIMA[®] LT1 Polymer, visio.link bonding agent (bredent) has been tested and approved by VITA.
- Subsequent use of the transparent VITA VM LC PRE OPAQUE is highly recommended; the viscosity of this product ensures superior coating of the surfaces and perfect curing.
- Afterwards, the opaquer is applied and the VITA VM LC layering is carried out as described in the VITA VM LC working instructions (No. 1200E), starting on page 10.

| The following products require hazard identification: | | |
|---|--|--|
| <p>VITAVM₆LC flow (contains triethylene glycol dimethacrylate, 2-(Dimethylamino)ethyl 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>VITA CERAMICS ETCH (hydrofluoric acid ceramic etching gel)</p> | <p>Caustic / Toxic</p> <p>For extraoral use only! Contains hydrofluoric acid. Toxic if swallowed. Fatal in contact with skin. Causes severe skin burns and damage to eyes. Harmful by inhalation. Wear safety goggles/protective gloves/protective clothing. Keep locked up. If swallowed, call Toxicological Information Center immediately and provide safety data sheet. In case of contact with clothing/skin, remove contaminated clothing immediately and rinse with copious amount of water. Specific measures, see safety data sheet. In case of contact with eyes, rinse with water for a few minutes and consult a doctor/Toxicological Information Center. This material and its container must be disposed of as hazardous waste.</p> |   |
| <p>VITASIL[®] (Silane bonding agent)</p> | <p>Highly flammable</p> <p>Causes severe eye irritation. Highly flammable liquid and vapor. Store container well sealed at an adequately ventilated place. Keep away from ignition sources. - No smoking. Do not empty into drains. This material and its container must be disposed of as hazardous waste.</p> |   |

Disposal: Proper disposal must be ensured. Disposal in accordance with the regulations of the authorities. Please refer to the safety data sheet for detailed information!

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: 03.15

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

VITAVM[®]LC **VITAVM[®]LC flow** **VITA CAD-Temp[®]** **VITAVM[®]CC**
VITA ENAMIC[®] **VITASIL[®]**

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We would like to thank Mr. Jürgen Freitag (MDT) for his kind support and for providing the photos on pages 11-13.

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