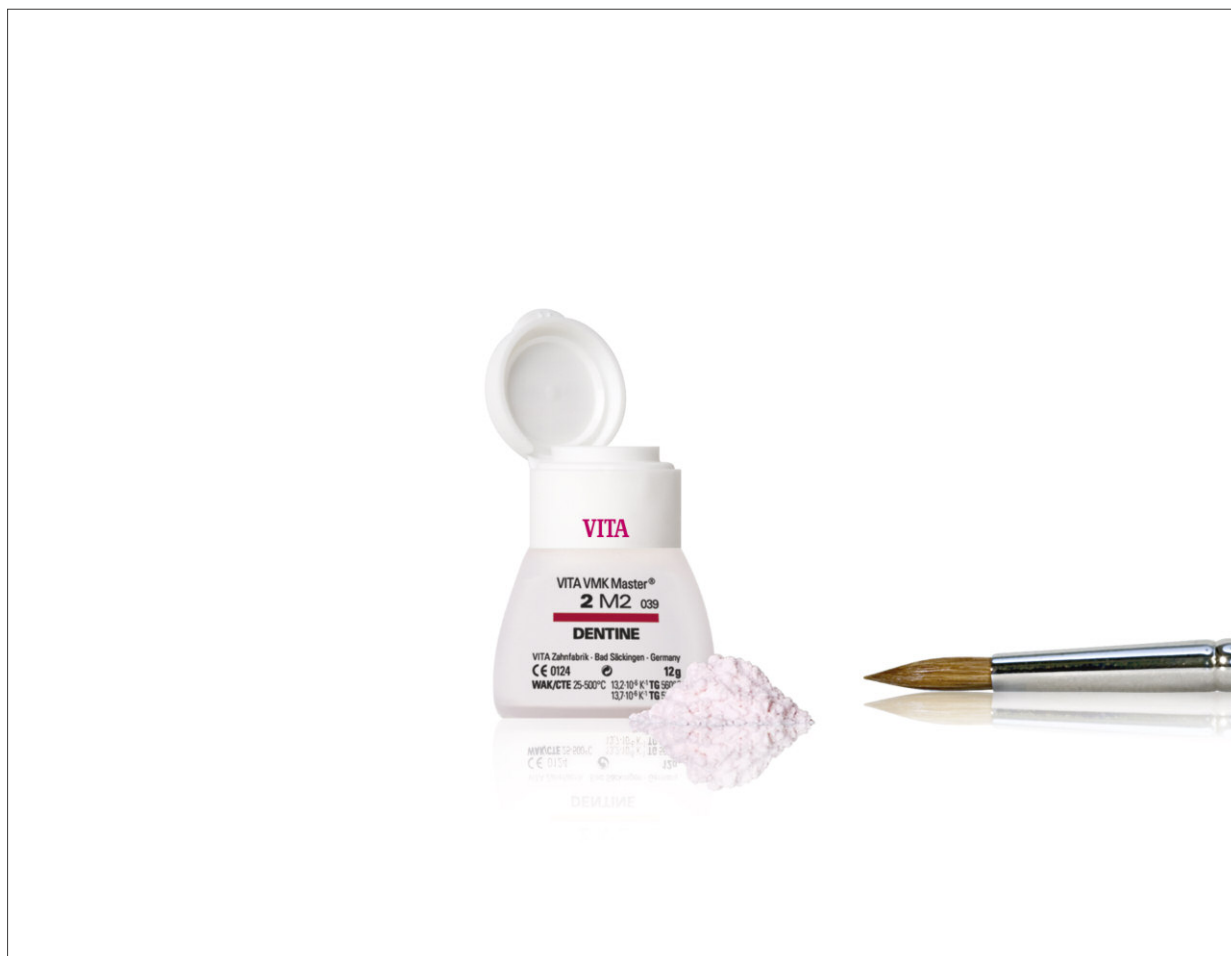


VITA VMK Master®

Working Instructions



VITA shade taking

VITA shade communication

VITA shade reproduction

VITA shade control

Edition: 07.12

VITA shade, VITA made.

VITA

For veneering metal-ceramic substructures in the conventional CTE range (13.8 - 15.2). Available in VITA SYSTEM 3D-MASTER and VITA classical A1-D4 shades.

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VMK – the story of success continues **VMK 68 – VMK 95 – VMK Master®**

The first metal-ceramic system developed in Europe was launched into the market by VITA Zahnfabrik in 1962.

This VMK (VITA Metall Keramik) system which is still in use today includes dental ceramic materials of VITA Zahnfabrik which were fired to a precious metal alloy of Degussa Co.

Today continuously growing requirements on function and esthetics of metal-ceramic restorations confront us with the task to develop materials which do not only provide numerous individualization options but also enable us to achieve a convincing result with little effort.

To ensure a well-balanced combination of advanced materials and easy handling, the excellent processing characteristics of VMK 95 were combined with consequently perfected materials.

The result of this development process is VITA VMK Master - a material without any compromises. Simplicity and dependability achieved through experience.

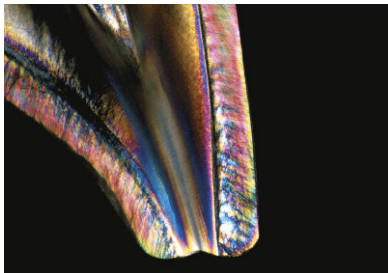
VITA VMK Master offers the user all possibilities to restore lost hard tooth substance in a natural and esthetic manner.

From solving rather simple problems to more complex patient cases - a single material is available which takes all our development goals into account.

Based on a classic and proven layering method, the use of VITA VMK Master allows to fabricate restorations with a natural appearance. Any challenge can be met individually thanks to the wide range of additional materials and a truly natural restoration can be obtained.

VITA VMK MASTER is a veneering ceramic for metal substructures made of high gold content, reduced gold content or palladium-based alloys in the conventional CTE range. The ceramic is particularly suitable for veneering non-precious metal substructures thanks to its firing temperature and chemical-physical properties.

VITA VMK Master is available in VITA SYSTEM 3D-MASTER and the original VITA classical A1-D4 shades.



VITA VMK Master is a conventional metal ceramic. Optimized manufacturing processes and a new distribution of particle sizes provide the development basis to obtain a product featuring good stability, low shrinkage as well as simple and economic processing for the fabrication of high-quality, esthetic restorations.

The structure of VITA VMK Master consists of two principal constituents: natural potassium (KAlSi_3O_8), orthoclase and sodium bicarbonate feldspars ($\text{NaAlSi}_3\text{O}_8$; albite) constitute the largest proportions and are frequently referred to as tectosilicates in literature since they form three-dimensional networks in the veneering ceramic. Potassium feldspar, which is essential for manufacturing the VITA ceramics, helps to achieve ideal abrasion on the antagonist tooth and chemical stability for the oral system.

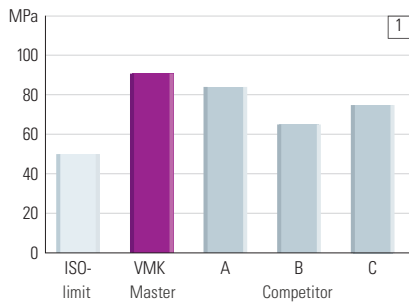
Orthoclase melts incongruently, i.e. melt and solid reveal different compositions. When using this type of feldspar, a melt is obtained which forms the glass phase and the leucite (KAlSi_2O_6) during solidification.

Leucite represents the crystalline phase of the VMK materials and is essential for the ceramic materials in two respects: on the one hand, it ensures the stability, i.e. it guarantees that the shape of firing object remains unchanged even at high temperatures. On the other hand, the coefficient of thermal expansion (CTE) of the veneering ceramic is controlled by the proportion of leucite. Moreover the crystals cause increased strength of the veneer and reduce crack propagation.

With 15 - 25%, quartz is another main constituent and is added to increase the proportion of the glass phase and hence the translucency.

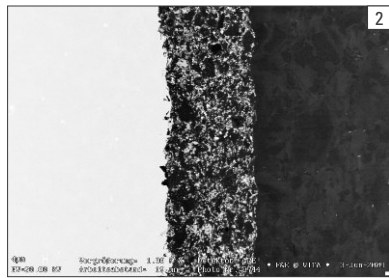
Metal oxides are also added to the veneering ceramics to optimize the optical properties. Accordingly, metal oxides are used as opacifiers and thus the translucency and the opalescence are adjusted. In addition to the metal oxides, pigments are added to the VITA metal ceramics, which are produced in a special fritting process; these pigments are not burned and remain unchanged over the years but determine the final shade of the fired ceramic and thus provide the restoration with long-term shade stability.

| Physical properties | Unit of measure | Value |
|------------------------------------|-------------------------------|-------------|
| CTE (25–500°C) - OPAQUE | $10^{-6} \cdot \text{K}^{-1}$ | 13,6–14,0 |
| Softening point - OPAQUE | °C | approx. 670 |
| Transformation point - OPAQUE | °C | approx. 575 |
| CTE (25–500°C) - DENTINE | $10^{-6} \cdot \text{K}^{-1}$ | 13,2–13,7 |
| Softening point - DENTINE | °C | approx. 660 |
| Transformation point -DENTINE | °C | approx. 565 |
| Solubility - DENTINE | $\mu\text{g}/\text{cm}^2$ | <10 |
| 3-point flexural strength -DENTINE | MPa | approx. 90 |
| Average particle size - DENTINE | μm | approx. 19 |
| Adhesive bond | MPa | >50 |
| Density - DENTINE | g/cm^3 | approx. 2,4 |



Physical properties

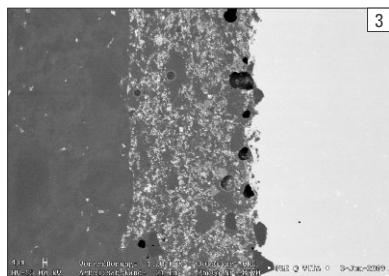
In addition to excellent bonding to metal and perfect thermal stability, VITA VMK MASTER features extremely low solubility in acids. Moreover, compared to materials of competitors and the ISO limit according to ISO 6872, VITA VMK MASTER exhibits outstanding flexural strength values.



Figures 2 and 3 show a fired opaque material. The dark layer is the fired ceramic and the light one is the metal substructure.

The highly homogeneous opaque layer of VITA VMK MASTER between these two layers can be seen in figure 2. Uniform distribution of the individual opaque components can be clearly recognized.

Bubbles and small cracks in the non-homogeneous opaque of a competitor can be seen in figure 3.



Thanks to a special processing step, a very homogeneous structure of the opaque could be achieved. Bonding to the metal alloy could also be considerably improved by the homogeneous distribution; the application behavior was optimized to ensure that a creamy consistency is obtained after mixing with the opaque liquid. The mixed opaque can be agitated onto the sandblasted substructure even more easily and the homogeneous, creamy surface eliminates the formation of bubbles. Bonding to the metal substructure is considerably facilitated and improved.

Fig. 1: 3-point flexural strength values according to ISO 6872

Fig. 2: SEM photo of the very homogeneous VITA VMK Master opaque structure

Fig. 3: SEM photo of a poor opaque structure

Our practical experience in the CTE range of $13,8-15,2 \cdot 10^{-6} \cdot K^{-1}$ has shown that good results can be achieved when the CTE of the alloy (measured at 25 - 600°C) is within the range $14,0 - 14,4 \cdot 10^{-6} \cdot K^{-1}$.

In the case of alloys with a CTE range (measured at 25 - 600°C) $\geq 14,5 \cdot 10^{-6} \cdot K^{-1}$, slow cooling should be used from the 1st dentine firing onwards. Normally the veneering ceramic is cooled down quickly at a temperature at which it is viscous or liquid. During cooling stress is formed in the glass matrix since the outer layer cools down more quickly than the inner layer of the metal ceramic. As a result, the inner side of the veneering ceramic is exposed to tensile stress and the surface to compressive stress. If there are additional large differences in the CTE (alloys $>14,0 - 14,4 \cdot 10^{-6} \cdot K^{-1}$), the stress that is normally formed during cooling can be minimized by long-term cooling. If the alloy has a higher thermal expansion coefficient, cooling from 900°C – 700°C must not be completed in less than 3 minutes.

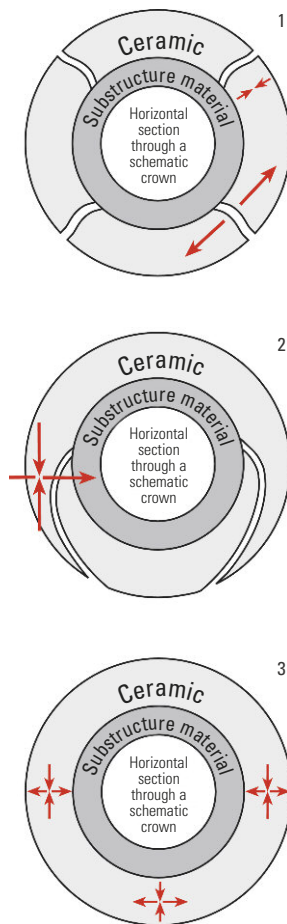
If the CTE of the substructure material is considerably lower than the CTE of the veneering ceramic, tangential tensile stress will increase and form cracks that run to the outside. This may result in late cracks (fig. 1).

If the CTE of the substructure material is considerably higher than the CTE of the veneering ceramic, tangential compressive stress will increase and form cracks that run almost parallel to the substructure. This may result in flaking (fig. 2).

The ideal tangential and radial tensile stress is ensured if the CTE of the ceramic has been optimally matched with the CTE of the substructure material (fig. 3).

Optimal preconditions are given if the veneering material features a somewhat lower CTE value than the substructure material. Due to adhesive bonding, the ceramic must follow the thermal behavior of the substructure material. If cooled down, the ceramic is exposed to slight tangential compressive stress.

If a substructure material is veneered with ceramic, the thickness of the veneer is a decisive factor in addition to the CTE value. Accordingly, differences in strain (radial tensile stress) are obtained, which will grow in case of increasing layer thickness.



Natural dentine exhibits various shades and degrees of opacity.
Natural enamel, however, may be translucent and opaque.
The shade effect is produced by reflection of light.
Light is not only reflected on the surface but - due to the translucency of natural teeth - also from the depth, i.e. translucent elements of teeth are also subject to ambient influences. The color impression can be noticeably changed through different lighting conditions.

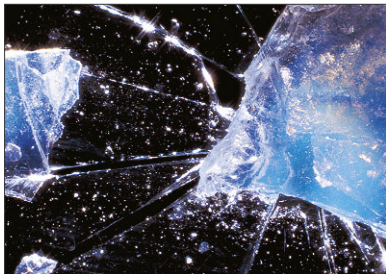


The more translucent a body, the deeper light will penetrate into it and the greyer it will appear. If the opacity increases, the level of grey will decrease and the lightness will increase.



Translucency

transparent = pervious to light
translucent = milky, not transparent
opaque = impervious to light



Opalescence

opal-like, reddish-bluish iridescence
Appears to be reddish in transmitted light and bluish in incident light



Fluorescence

Property of some materials to shine after exposure to light. Dental ceramics are colored with bluish-whitish fluorescences and subsequently have a blue-white or yellow-green glow. This phenomenon can be clearly observed in black light, diffuse light (fog) and sunlight.

Indication

metal-ceramic full veneers
metal-ceramic partial veneers

Contraindication

Bruxism

Firing temperature

When using dental ceramics, the firing result largely depends on the individual firing procedure and the substructure design of the user. The type of furnace, the location of the temperature sensor, the firing tray as well as the size of the object during the firing cycles are essential factors for the quality of the firing result. Our application-technical recommendations (regardless whether they have been provided orally, in writing or in the form of practical instructions) are based on extensive experience and tests. The user, however, should consider this information only to provide basic values. If surface, transparency and degree of gloss should not correspond to the firing result that is achieved under optimal conditions, the firing procedure must be adjusted correspondingly. The crucial factors for the firing procedure are not the firing temperature displayed by the furnace but the appearance and the surface condition of the ceramic after the firing process.

⚠ Note: Firing trays may also have a major influence on the result. All firing temperatures for VITA VMK Master are based on the use of black ceramic firing trays. When using light firing trays, the temperature must be raised by 10 – 20 °C depending on the type of furnace that is used.

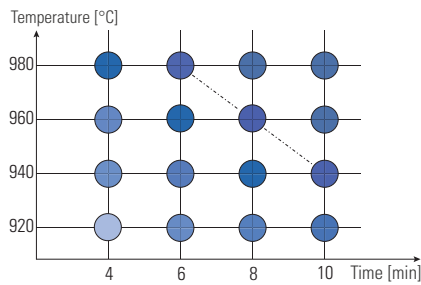


Fig. 1: Schematic view of the fired firing samples

In addition to the firing temperature, the correct degree of firing of a veneering ceramic depends on other parameters such as:

- Preheating temperature and time
- Heat-up time until firing temperature is reached
- Holding time of the ideal firing temperature
- Vacuum (level and duration)
- Position of the firing object in the furnace

Figure 1 shows that firing samples with the same degree of firing can be prepared at different firing temperatures by changing the holding time and the heat-up time. Of course, firing temperature and the heat-up times need to be adapted to the respective veneering ceramic and furnace.

This test clearly demonstrates that the same degree of firing can be achieved both with higher temperatures and shorter heat-up times and lower temperatures and longer heat-up times.

The temperature and the heat-up time for the furnace in use have been correctly adjusted, if the firing sample is transparent and has an intensive shade and sharp edges.

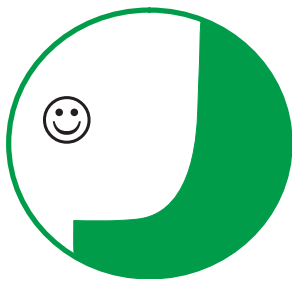
If the end temperature is too high, the sample will have a "greasy" gloss and rounded edges (to the right, above the diagonal).

If the end temperature is too low and the heat-up time too short, the firing sample appears to be milky and "dull" (to the left, below the diagonal).



Fig. 2

During laboratory use, correct firing is indicated if the surface of the ceramic has a slight gloss (fig. 2, to the right). If the ceramic appears to be milky and non-homogeneous, the correct degree of firing could not be achieved (fig. 2, to the left). If the desired result is not achieved, approach the correct firing temperature in steps of 5-10°C.



General information

A chamfer or shoulder with rounded inner angle should be prepared for crowns.

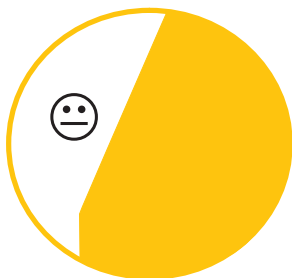
The aim should be a circumferential cutting depth of one millimeter.

The vertical preparation angle should be at least 3°.

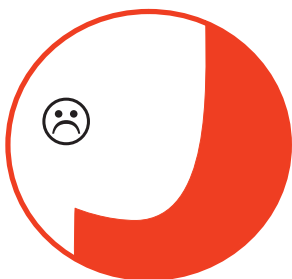
All transitions from the axial to the occlusal or incisal surfaces should be rounded. Uniform and smooth surfaces are recommended.



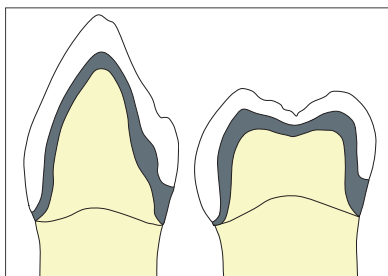
Shoulder preparation or chamfer preparation



Tangential preparation - contraindicated for ceramic shoulders



Incorrect chamfer preparation - generally contraindicated



Substructure design

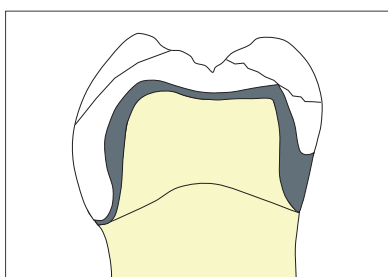
The substructure reflects the shape of the tooth in a reduced size (design supporting the tooth shape). It must be ensured to apply the ceramic material in a uniform layer thickness (max. 2 mm). During the application, the requirements for the various alloys must be observed:

- Substructures with insufficient dimensions cause higher shrinkage of the veneering ceramics and hence require additional firing processes.
- Substructures with insufficient dimensions do not provide adequate support for the veneering ceramic which may result in cracks and chipping in the case of very thick layers.



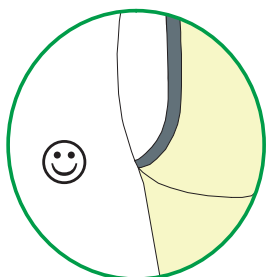
Cross-section of connectors

The cross-section of the interproximal connectors has a major influence on the stability of the restoration. Therefore the interproximal connectors must have adequate dimensions depending on the alloy in use!



Crown substructures and bridge units to be veneered with ceramic materials must be designed in a way to ensure that wall thicknesses of crowns are at least 0.3 mm and wall thicknesses of bridges are at least 0.5 mm.

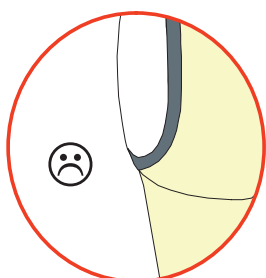
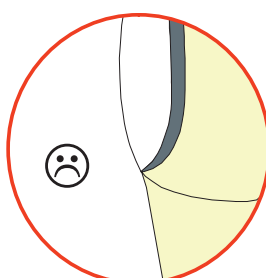
For more information, refer to the working instructions of the respective alloy. Transition areas between metal and veneering ceramic must not be located in the area of contact points and on surfaces involved in masticatory function. The transition area in the interproximal area should be designed in a way to allow careful cleaning.



Design of a metal margin

The transition area of the metal substructure to the veneering material must be clearly defined and a right angle should be prepared whenever it is possible. Transitions between metal and veneering ceramic should not be in the vicinity of contact points and on occlusal surfaces.

When preparing the interdental space, the transition should be designed in a way to allow easy cleaning.





The modelled bridge substructure from the labial side: the interproximal connectors are located at the level of the contact points and should be designed in a way to enable the fabrication of highly esthetic restorations and allow careful hygiene.



To achieve sufficient stability between the bridge pontic and bridge abutments, a palatal or lingual collar is recommended.

Moreover, to ensure uniform cooling of the bridge pontic which absorbs most of the heat, cooling fins are advantageous.



Cross-cut tungsten carbide burs are recommended for finishing.



After removal of the investment material, the cast substructure must be ground from all sides before firing on the ceramic material to ensure a perfectly clean surface.

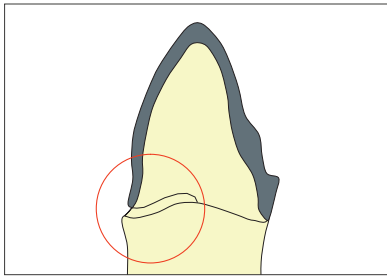


After finishing, the substructure needs to be carefully sandblasted with aluminium oxide (Al_2O_3). To avoid inclusions of abrasive material, it is recommended to sandblast the alloys with the indicated pressure while keeping the nozzle at a flat angle to the object surface. The pressure and the particle size to be used depend on the type of alloy. Then the substructure must be cleaned with a brush under running water or using a steam jet.

⚠ Note: Use only pure Al_2O_3 for sandblasting the alloy surface. A contaminated metal surface may result in the formation of bubbles during ceramic firing. Please observe the information in the working instructions of the manufacturer of the respective alloy. Sandblasting improves the mechanical bond. Consequently, the surface of the object is roughened and considerably enlarged.



Substructure after finishing - prepared to fabricate a ceramic shoulder.



When fabricating ceramic shoulders, it must be ensured that the substructure (not the veneer) is supported by the prepared tooth (stump). Therefore the substructure is reduced exactly to the inner edge of the chamfer or shoulder preparation. This way, functional support of the substructure is achieved.



To achieve perfect, esthetic integration of the crown into the relevant esthetic areas and to avoid shadow areas, sufficient reduction of the substructure, in particular in the interproximal area, is required. Make sure to obtain a round and thin metal edge after the reduction.

To achieve even contours, it is recommended to use a pen to mark the reduction of the shoulder on the substructure (black line in the figure).

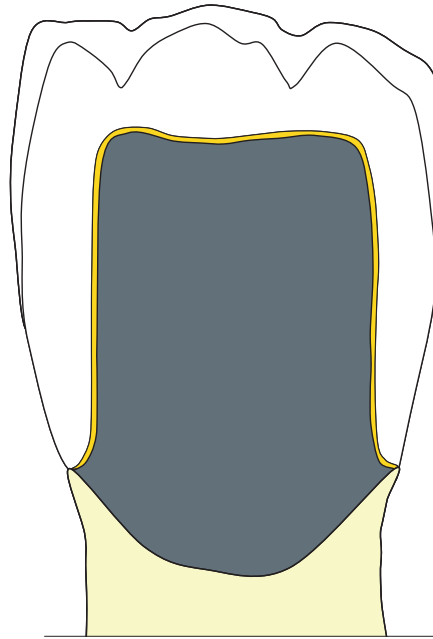
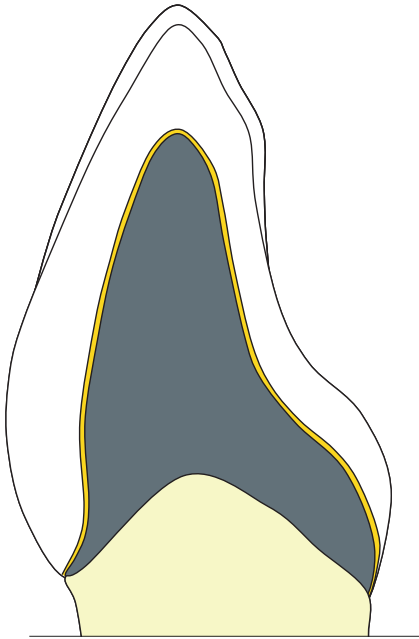


Completely reduced crown.

Note: It must be ensured that the shoulder is adequately supported by the metal substructure.



Substructure sandblasted with Al_2O_3 . Compare also with the information on the preparation of the bridge substructure.



To mask the shade of the alloy and to ensure perfect bonding to the metal substructure, opaque material is applied. The decisive element in the chain of processes is the combination of washbake and opaque firing which has a decisive influence on the quality of the bond. The opaque material is used to create the basis of the shade of an esthetic restoration.

⚠ Note: To achieve a more intense and warmer shade, the respective OPAQUE can be mixed with wash opaque (WO). However, the final result of the restoration may differ from the shade sample.

Gold-colored wash opaque and the respective opaque material (OP) are available for the washbake. One opaque material is required for reproducing the VITA SYSTEM 3D-MASTER shades (one for each lightness level) and the VITA classical A1-D4 shades (one for each shade).

WO and OP have the same chemical-physical properties and hence are perfectly suitable for the washbake.

Function - washbake:

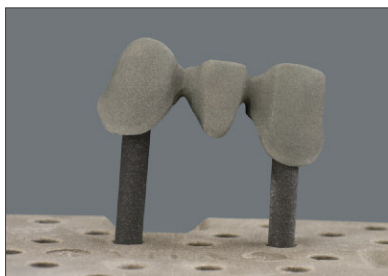
- Obtaining the bonding oxides and supporting the chemical bond
- Creating ceramic zones on the surface and strengthening the retentions for the ceramic
- Coloring

Three variations are available for the application of the wash opaque or opaque materials:

- Powder: the opaque powder is mixed with the VITA OPAQUE FLUID and applied to the clean and dry substructure using a brush or glass instrument.
- Pastes: The paste opaque is supplied in a ready-to-use consistency and can also be applied using a brush or glass instrument.

⚠ Note: Pastes must be stirred with an instrument before they are used. If the paste can no longer be stirred after extended storage, the original consistency can be restored by adding a specific quantity of VITA PASTE FLUID. Please make sure that the paste opaque will not come into contact with water to avoid the formation of bubbles and cracks in the opaque during firing.

- VITA SPRAY-ON technique: the opaque powder is mixed with VITA SPRAY-ON LIQUID in the respective glass jar and then sprayed evenly onto the substructure surface. Please observe the information in the separate working instructions for VITA SPRAY-ON (No. 492).



The substructure that has been pretreated and oxidized in accordance with the parameters given by the alloy manufacturer.

The information of the respective alloy manufacturer must be observed!

Prior to further processing, clean the metal substructure under running water using a brush.

Then, thoroughly clean it with steam.



Note: After cleaning, the substructures must not be picked up with the fingers but with clean tweezers or clips.

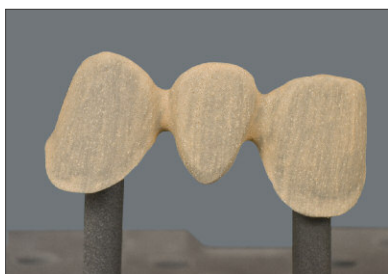
Wash bake

A thin coat of paste opaque must be brushed on the surface of the substructure and an extended predrying time is required for drying the paste.

Alternatively, the mixed opaque powder can be applied thinly and evenly (semi-masking) on the bridge substructure or sprayed on thinly using the VITA SPRAY-ON technique. Please make sure not to apply a first layer too thick.

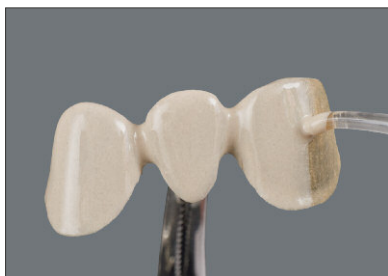
Recommended firing Wash bake

| | Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| Paste | 500 | 6.00 | 5.45 | 80 | 960 | 1.00 | 5.45 |
| Powder | 500 | 2.00 | 5.45 | 80 | 960 | 1.00 | 5.45 |



Completely fired wash opaque.

Note: Substructures which reveal considerable formation of oxides need to be cleaned with a toothbrush under running water or with the steam jet after each firing process.



Opaque firing

Mix powder opaque to a creamy consistency with OPAQUE FLUID. Apply with a brush or a glass instrument to mask the surface of the veneer and fire according to the appropriate firing cycle. Paste opaque is applied in the same way to mask the surface of the clean and dry substructure or, alternatively, sprayed on with VITA SPRAY-ON.

Avoid excessive condensation and avoid thick opaque layers from flowing into the occlusal, approximal or marginal areas especially when fabricating bridges. Thick opaque layers may crack during firing.

Before opaque firing, it must be ensured that the material is applied evenly and the entire metal substructure is adequately covered. After firing, the metal structure must be no longer visible; if required, the opaque must be applied and fired again.

Recommended firing OPAQUE firing

| | Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| Paste | 500 | 6.00 | 5.38 | 80 | 950 | 1.00 | 5.38 |
| Powder | 500 | 2.00 | 5.38 | 80 | 950 | 1.00 | 5.38 |

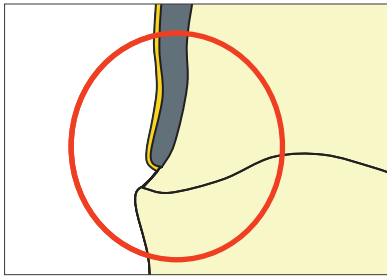


⚠ Note: Problems can also occur if the opaque is dried too quickly. If the recommended pre-drying and drying times are not adhered to, small cavities may form or the opaque may flake off. In such cases the opaque liquid or the paste were converted too quickly from the liquid to the gaseous state.

The correct surface of the fired opaque exhibits a slight "egg shell" luster.



The WASH material is applied in the same way as for a bridge.



Difference to the opaque firing

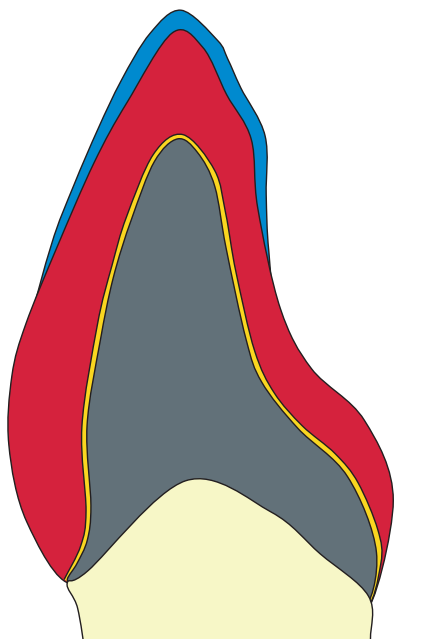
To achieve good bonding to the shoulder material, the opaque needs to be applied across the reduced metal margin (see graphic).

Note: Excess opaque material must not penetrate into the crown in order not to affect the fit.



Substructure with completely applied opaque - prepared for the application of shoulder material.

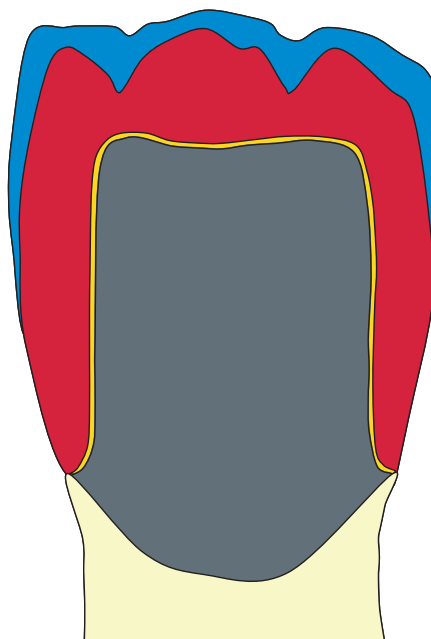
The application of a shoulder material is explained in the section "Application of a ceramic shoulder".



The shade sample can be reproduced using the STANDARD layering comprising the DENTINE and ENAMEL materials. These materials are mixed with VITA MODELLING FLUID or VITA MODELLING FLUID RS.

VITA MODELLING FLUID avoids fast drying of the ceramic material. The fluid increases the plasticity during layering. The smooth consistency of the red RS fluid allows extended processing (also under wet conditions) and ensures good stability and hence the fluid is particularly suitable for large-sized restorations and multi-unit bridges.

If only little space (> 0.6 mm) is available, the shade effect can be enhanced by the use of OPAQUE DENTINE.



OPAQUE DENTINE can also be used to avoid loss in color of the pontics, in particular in the area of the gingiva. It is also suited to reproduce shade-intensive areas, such as occlusal surfaces of molars.

When veneering with VITA classical A1-D4 shades, the shade reproduction in the cervical area can be supported by the use of NECK materials.

Since natural teeth frequently exhibit higher chroma in the gingival area, NECK materials are also suitable to achieve such higher chroma (intensity) and opacity.



Bridge coated with opaque on the model.



To allow easy removal of the restoration later on, the model is previously insulated with VITA Modisol.



OPAQUE DENTINE

To avoid differences in the shade of abutment crowns and pontics, OPAQUE DENTINE is applied to the basal surface and to the cervical area of the pontic.



Frequently, cuspids do not provide sufficient space for dentine and enamel materials. Therefore a thin layer of OPAQUE DENTINE is applied in this area to ensure that the correct shade is maintained, in particular for layer thicknesses below 0.8 mm.



DENTINE

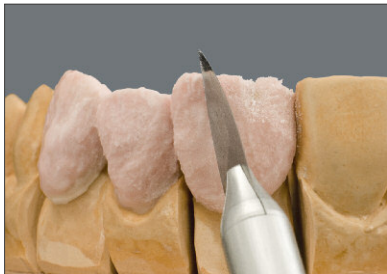
Starting from the mesial and distal ridges ...



... the complete tooth shape is built up in DENTINE.
This way a useful basis with regard to the size, shape and position of the teeth is obtained.



A thin layer of DENTINE is applied on the layer of OPAQUE DENTINE that has already been applied to the cuspid and the shape is completed.



To obtain sufficient space for the enamel, the DENTINE is reduced in the incisal third.



To achieve a uniform level of moisture, the material should be carefully wetted with a brush in the interproximal areas from the palatal side before the enamel material is applied. It is not necessary to wet the material from both sides since the modelling fluid is spread across the entire interproximal area thanks to the capillary effect. The resulting adhesion forces are obtained thanks to the perfectly adjusted particle distribution in the material structure.



ENAMEL

To complete the crown shape, enamel is applied in small quantities.



To compensate firing shrinkage, the bridge must have a slightly larger size.



Using a slightly wetted separating knife ...



... the individual units of bridges are separated interproximally down to the opaque prior to the first dentine firing.



After removing the bridge from the model, the contact points need to be completed using DENTINE and ENAMEL.

Then the bridge is placed on a firing tray for the subsequent firing process.

Recommended firing 1st dentine firing

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| 500 | 6.00 | 7.49 | 55 | 930 | 1.00 | 7.49 |



After firing, the bridge is placed on the model and the contact areas are adjusted.



A diamond disc is used to separate the interproximal areas after the first dentine firing.



A small diamond tool is used to correct the shape.

Prior to the second dentine firing, grinding particles must be carefully removed from the restoration. It is recommended to clean the substructure with steam.



2nd dentine firing

First the interproximal areas are filled with DENTINE. Once the interproximal areas have been slightly condensed, the basal surface of the pontic is filled with OPAQUE DENTINE.

⚠ **Note:** To avoid drying of the materials applied in the interproximal areas, it is recommended to wet the interproximal areas with VITA MODELLING FLUID RS or VITA INTERNO FLUID when fabricating large-span bridges.



Before it is placed on the model, it is recommended to insulate the bridge with VITA Modisol. This way, any material applied in the basal area will not stick to the model.







Corrections of the shape are carried out starting from the neck using DENTINE ...



... and ENAMEL.

Recommended firing 2nd dentine firing

| Predr. temp. °C |  min. |  min. |  °C/min. | Temp. approx. °C |  min. | VAC min. |
|--------------------|---|---|---|---------------------|---|-------------|
| 500 | 6.00 | 7.38 | 55 | 920 | 1.00 | 7.38 |

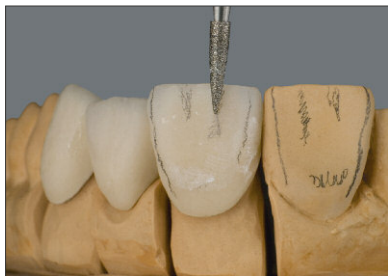


The contact points are checked again.



Finishing the marginal ridges using a fine diamond tool.

⚠ **Note:** The contours of the ridges were marked with a pen for enhanced control.



Then a natural surface structure is prepared, for example with growth lines and convex and concave areas.



Before processing is continued, grinding particles are carefully removed from the restoration using a toothbrush under running water or the steam jet.



If required, the entire restoration can be coated with VITA AKZENT glaze.



VITA AKZENT stains are available to create shade nuances and individual characteristics.

Recommended firing Glaze firing VITA AKZENT®

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| 500 | 4.00 | 5.15 | 80 | 920 | 1.00 | – |



Completed restoration after glaze firing.

Corrections after glaze firing.

For corrections after glaze firing, the CORRECTIVE material features a clearly lower firing temperature. The contours of the completed restoration will no longer be affected at this temperature.

Recommended firing CORRECTIVE

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| 500 | 6.00 | 6.33 | 55 | 860 | 1.00 | 6.33 |

The ceramic shoulder supports the natural effect of light in the transition area from the prepared tooth to the gingiva. The gingival margin of metal-ceramic restorations, which is frequently grey, can be rarely attributed to metal that is shining through but in most cases to the "shadow" caused by the missing light effect of the gingiva. Thanks to high fluorescence, VITA shoulder (MARGIN) materials support the natural distribution of light in the gingival area.

The MARGIN powders feature clearly different plastification than all other VITA VMK Master powder materials. Thanks to the patented procedure for the manufacture of VITA shoulder (MARGIN) materials, the veneering ceramic can be processed in a similar way as acrylic materials.

The plasticity of the mixed material is almost identical to that of veneering resins/composites so that a spatula is perfectly suitable for the application.



Thanks to plastification, no special liquid is required for mixing. The material is mixed with the VITA MODELLING FLUID enclosed in the assortment. To achieve a homogeneous mixing ratio of the MARGIN materials, it is recommended to mix the powders first (see "Classification tables").

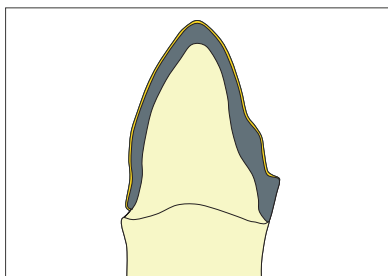


The modelling fluid is repelled due to plastification of the MARGIN materials (hydrophobic effect).



Therefore the material must be mixed with the liquid using a spatula to obtain a dough-like consistency.

⚠ Note: The use of an ever-wet tray is not recommended since the capillary effect of the tray may be adversely affected by the plastification. Dried MARGIN material **can not** be mixed again.



The opaque material is applied as shown in the figure. See also the information in the section "Application of the opaque for a ceramic shoulder".

It is recommended to seal the plaster die before the shoulder materials are applied.



Then the dry and pretreated die is carefully insulated with VITA Modisol and the prepared coping is placed on the model.

Note: Make sure that the surface to be veneered will not come into contact with the insulating agent.



Opaque-coated coping on the model.



It is recommended to apply and evenly spread the material (dough-like consistency) using a plastic or ceramic spatula before the first MARGIN firing is carried out.



The material should be slightly condensed on the model.



To ensure accurate fit after firing, the shoulder material must not be applied beyond the preparation margin. Consequently, any excess material must be removed. Then the crown is completely dried with a hairdrier or with radiated heat at the furnace chamber.

Note: Excess liquid can be absorbed using a paper towel.

Recommended firing MARGIN firing

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| 500 | 6.00 | 8.00 | 55 | 940 | 1.00 | 8.00 |



Check the shoulder area in the inside of the crown and carry out minor corrections without exerting any pressure. Then place the fired crown carefully on the model.



The model is insulated with VITA Modisol again. A creamy consistency is required for a second firing process.



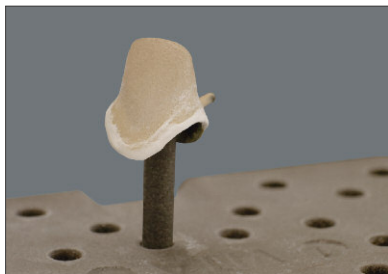
Use a brush to apply small amounts of material to the bottom of the shoulder and place the crown (coping) on the model.



Then complete the missing areas by carefully applying the shoulder material in the space resulting from the 1st shoulder firing, thus providing optimum accuracy of fit of the ceramic shoulder. Then the shoulder is completed.



Samples of the shoulder materials



Dry the coping (crown) as described, carefully remove it from the model and place it on a ceramic firing tray.

Note: The shoulder (MARGIN) material must not come into contact with the firing tray.

Recommended firing MARGIN firing

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|-----------------|--------|--------|-----------|------------------|--------|----------|
| 500 | 6.00 | 8.00 | 55 | 940 | 1.00 | 8.00 |

After the second MARGIN firing, the fired coping may have to be adjusted to the model.



Completely fired shoulder on the model.

Note: Individual layering is based on the natural residual teeth of the patient. Accordingly, the following layering procedure is only an example.

An overview of the materials described in the following can be found in the section "Explanation of the materials" on pages 40 and 41.



The coping prepared with shoulder material.



LUMINARY

A thin coat of LUMINARY materials is applied (similar to the application of an OPAQUE DENTINE material) to increase the fluorescence and to achieve adequate support of the shoulder material applied in the neck area. Moreover these materials ensure good coverage of the opaque in thin areas.

Note: To cover the incisal crown coping, the LUMINARY materials can be applied slightly beyond the edge.



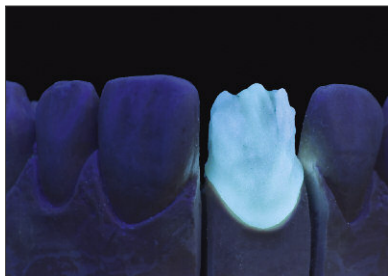
Samples of the LUMINARY materials

Recommended firing LUMINARY firing

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|-----------------|--------|--------|-----------|------------------|--------|----------|
| 500 | 6.00 | 8.00 | 55 | 940 | 1.00 | 8.00 |



The coping fired with LUMINARY ...



... under black light.



DENTINE

The dentine body is built up step by step until the desired shape is obtained.



For this purpose, depending on the tooth shade, various DENTINE materials can be used to achieve natural refraction of light.

⚠ **Note:** To "compensate" for shadow areas, a dentine material of the next lightness level or - in thin areas - a DENTINE with higher chroma can be used.



TRANSLUCENT/ENAMEL

The incisal or approximal length of the crown can already be determined with translucent materials. The natural reflection of the crown is supported by alternating layers and light is "added" to the restoration. Moreover the application of the incisal DENTINE MODIFIER materials is facilitated.



DENTINE MODIFIER

A mamelon structure is created in the incisal area using DENTINE MODIFIER materials and the shade of specific areas is intensified.

The DENTINE MODIFIER materials can be "washed in" in their unmixed state or mixed with DENTINE.



Samples of the DENTINE MODIFIER materials



ENAMEL

To obtain lighter shades of mesial and distal areas, ENAMEL materials are applied. Darker areas of misaligned teeth can be adjusted.



Intermediate firing based on the parameters of the first dentine firing is recommended for visual control of an individual layering.

Recommended firing 1st dentine firing (intermediate firing)

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|--------------------|-----------|-----------|--------------|---------------------|-----------|-------------|
| 500 | 6.00 | 7.49 | 55 | 930 | 1.00 | 7.49 |



CERVICAL

Apply CERVICAL material in the body area to complete the crown shape.
As a result the effect of depth is increased in this area.
Moreover, the CERVICAL materials add a warm shade to the crown.



Samples of the CERVICAL materials



ENAMEL/TRANSLUCENT





Incisal layering is carried out by applying alternating layers of different ENAMEL (EN) and TRANSLUCENT (T) materials.

The alternating layers of various translucent materials support the natural refraction of light of the crown and create various shade reflections.



Samples of the TRANSLUCENT materials

Recommended firing 1st dentine firing

| Predr. temp. °C |  min. |  min. |  °C/min. | Temp. approx. °C |  min. | VAC min. |
|--------------------|---|---|---|---------------------|---|-------------|
| 500 | 6.00 | 7.49 | 55 | 930 | 1.00 | 7.49 |



Crown (coping) on the model after the first dentine firing.



The final shape can be obtained by using TRANSLUCENT (T), OPAL TRANSLUCENT (OT) or PEARL TRANSLUCENT (PLT) materials. The use depends on the patient's age and the individual appearance of the residual teeth.

Note: T6 and T8 have an intense shade and may influence the shade result considerably.

Recommended firing 2nd dentine firing

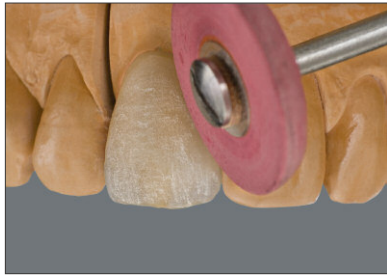
| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|-----------------|--------|--------|-----------|------------------|--------|----------|
| 500 | 6.00 | 7.38 | 55 | 920 | 1.00 | 7.38 |



The diamond abrasive tools and rubber polishers used for processing.



Following the example of the natural tooth, the surface structure is contoured.



Especially in older patients, it is recommended to smooth ridges or anomalies with a rubber polisher prior to glaze firing.





Recommended firing Glaze firing

| Predr. temp. °C | → min. | ↗ min. | ↗ °C/min. | Temp. approx. °C | → min. | VAC min. |
|-----------------|--------|--------|-----------|------------------|--------|----------|
| 500 | 0.00 | 5.15 | 80 | 920 | 1.00 | – |

For glaze firing, the degree of gloss and the structure of the surface can be controlled by the temperature rise rate, the end temperature and the holding time. Surface treatment and preparation before firing are additional factors of influence. Accordingly, the information on glaze firing can only be used as a reference. Moreover, mechanical polishing is also possible to achieve different degrees of gloss. Diamond-coated rubber polishers, high-gloss polishers, pumice, etc. are suitable for mechanical polishing.



Completed crown with natural gloss (without the use of glaze material).

| | Predr. temp. °C |  min. |  min. |  °C/min. | Temp. approx. °C |  min. | VAC min. |
|--------------------------------|---|--|--|---|---------------------|--|-------------|
| Oxide firing | Please adhere to the instructions of the manufacturer of the alloy! | | | | | | |
| WASH bake | 500 | 2.00 | 5.45 | 80 | 960 | 1.00 | 5.45 |
| PASTE WASH bake | 500 | 6.00 | 5.45 | 80 | 960 | 1.00 | 5.45 |
| OPAQUE firing | 500 | 2.00 | 5.38 | 80 | 950 | 1.00 | 5.38 |
| PASTE OPAQUE firing | 500 | 6.00 | 5.38 | 80 | 950 | 1.00 | 5.38 |
| MARGIN firing | 500 | 6.00 | 8.00 | 55 | 940 | 1.00 | 8.00 |
| LUMINARY firing | 500 | 6.00 | 8.00 | 55 | 940 | 1.00 | 8.00 |
| Stains fixation firing | 500 | 4.00 | 4.45 | 80 | 880 | 1.00 | 4.45 |
| 1 st dentine firing | 500 | 6.00 | 7.49 | 55 | 930 | 1.00 | 7.49 |
| 2 nd dentine firing | 500 | 6.00 | 7.38 | 55 | 920 | 1.00 | 7.38 |
| Glaze firing | 500 | 0.00 | 5.15 | 80 | 920 | 1.00 | – |
| Glaze firing - VITA AKZENT | 500 | 4.00 | 5.15 | 80 | 920 | 1.00 | – |
| Correction firing with COR | 500 | 6.00 | 6.33 | 55 | 860 | 1.00 | 6.33 |

Please note:

When using dental ceramics, the firing result largely depends on the individual firing procedure of the user, i.e. among other aspects on the type of furnace, the location of the temperature sensor, the firing tray as well as the size of the workpiece during the firing cycles.

Our application-technical recommendations for the firing temperatures (regardless whether they have been provided orally, in writing or in the form of practical instructions) are based on numerous experiences and tests. The user, however, should consider this information only to provide basic values.

If surface, transparency and degree of gloss should not correspond to the firing result that is achieved under optimal conditions, the firing procedure must be adjusted correspondingly. The crucial factors for the firing procedure are not the firing temperature displayed by the furnace but the appearance and the surface condition of the firing object after the firing process.




VITA VACUMAT "New Generation"

The new modular firing system permits perfect individual solutions and is extremely economically efficient. The system comprises the premium furnace VITA VACUMAT 6000 M, three freely selectable control units (vPad easy, vPad comfort and vPad excellence), which enable up to four furnaces to be controlled with one control unit as well as various useful extras.

The fully automatic VITA VACUMAT 6000 M for all dental ceramic firings, available in a modern compact and ergonomic design, offers consistent firing results of convincing quality thanks to the innovative firing technology.

Explanation of the firing parameters

Predr. °C Start temperature

 min. Predrying time in min, closing time

 min. Heating time in min.

 °C/min. Temperature rise rate in degrees Celsius per minute

Temp. approx. °C End temperature

 min. Holding time for the end temperature

VAC min. Vacuum holding time in minutes



VITA Linearguide / VITA Toothguide 3D-MASTER®

With the VITA Linearguide 3D-MASTER you can determine the correct tooth shade swiftly and accurately. The modern design and the linear arrangement enable quick determination of the suitable tooth shade.

The VITA Linearguide 3D-MASTER is an alternative to the proven VITA Toothguide 3D-MASTER and features different linear arrangement of the shade tabs.



VITA Easyshade® Advance

VITA Easyshade Advance enables the user to determine the respective tooth shade quickly and to verify ceramic restorations. The cordless, portable and lightweight unit features simple handling and displays the tooth shade in just a few seconds. Its high measuring accuracy of VITA SYSTEM 3D-MASTER and VITA classical A1–D4 shades is based on its spectrophotometric measuring technology, which is the prerequisite for perfect results.



VITA classical A1–D4 shade guide

The original – for the determination of the tooth shade in VITA classical A1–D4 shades.

VITA VMK Master® shade indicators

Overview of shade samples of the materials included in the STANDARD assortment, such as OPAQUE, OPAQUE DENTINE, DENTINE and ENAMEL.

VITA VMK Master® shade guides

Prefabricated shade samples of the effect materials for the determination of individual shade characteristics.












VITA VMK Master® Classification tables




The classifications below may only be used as references!

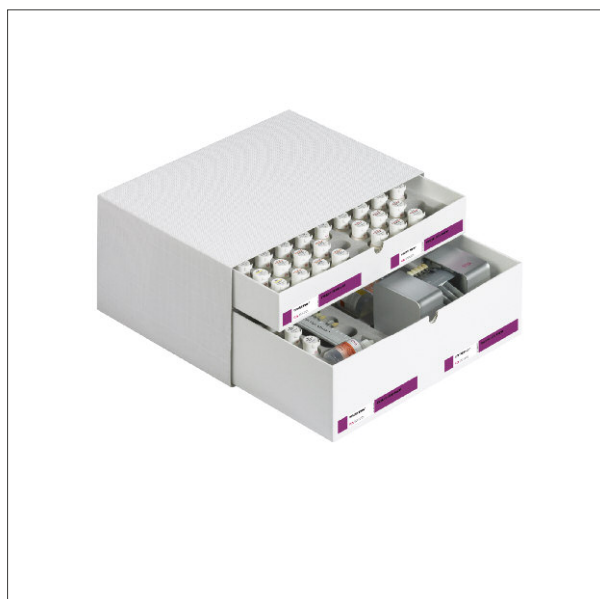
| VITA SYSTEM 3D-MASTER® shades | OPAQUE | MARGIN | LUMINARY | NECK | CERVICAL | ENAMEL |
|-------------------------------|--------|--------|-----------|--------|----------|--------|
| 0 M1 | OP0 | M1 | LM1 | — | — | EN1 |
| 0 M2 | OP0 | M1 | LM1 | — | — | EN1 |
| 0 M3 | OP0 | M1/M2* | LM1/LM2* | — | — | EN1 |
| 1 M1 | OP1 | MN/M2* | LM1/LM2* | N1 | CE1 | EN1 |
| 1 M2 | OP1 | M1/M3* | LM2 | N1 | CE1/CE2* | EN1 |
| 2L1.5 | OP2 | MN/M3* | LM2 | N1 | CE1/CE2* | EN1 |
| 2L2.5 | OP2 | M2/M3* | LM1/LM3* | N1/N2* | CE2 | EN1 |
| 2 M1 | OP2 | MN/M2* | LM2 | N1 | CE1 | EN1 |
| 2 M2 | OP2 | M2/M3* | LM2/LM3* | N1/N2* | CE2 | EN1 |
| 2 M3 | OP2 | M3 | LM2/LM3 * | N1/N2* | CE2 | EN1 |
| 2R1.5 | OP2 | M2/M3* | LM2 | N1 | CE1/CE2* | EN1 |
| 2R2.5 | OP2 | M3 | LM2/LM3* | N1/N2* | CE2 | EN1 |
| 3L1.5 | OP3 | M2/M5* | LM2/LM6* | N1/N5* | CE2 | EN1 |
| 3L2.5 | OP3 | M3/M5* | LM3/LM6* | N1/N3* | CE2/CE3* | EN1 |
| 3 M1 | OP3 | M1/M5* | LM2 | N1/N5* | CE2 | EN1 |
| 3 M2 | OP3 | MN/M5* | LM2/LM3* | N2 | CE1/CE3* | EN1 |
| 3 M3 | OP3 | M3/M5* | LM3 | N2/N3* | CE2/CE3* | EN1 |
| 3R1.5 | OP3 | MN/M5* | LM2 | N1/N5* | CE2 | EN1 |
| 3R2.5 | OP3 | M3/M5* | LM3/LM6* | N2/N3* | CE1/CE3* | EN3 |
| 4L1.5 | OP4 | M5 | LM2/LM6* | N1/N5* | CE2 | EN1 |
| 4L2.5 | OP4 | M3/M5* | LM3/LM5* | N3 | CE1/CE3* | EN1 |
| 4 M1 | OP4 | M2/M5* | LM6 | N1/N5* | CE2 | EN1 |
| 4 M2 | OP4 | M5 | LM2/LM5* | N1/N5* | CE1/CE3* | EN3 |
| 4 M3 | OP4 | M3/M5* | LM3/LM5* | N3/N4* | CE3 | EN3 |
| 4R1.5 | OP4 | M2/M5* | LM2/LM5* | N1/N5* | CE2 | EN1 |
| 4R2.5 | OP4 | M3/M5* | LM3/LM5* | N3/N4* | CE1/CE3* | EN3 |
| 5 M1 | OP5 | M5 | LM5/LM6* | N1/N5* | CE1/CE3* | EN1 |
| 5 M2 | OP5 | M3/M5* | LM3/LM5* | N3/N5* | CE2/CE3* | EN3 |
| 5 M3 | OP5 | M3/M5* | LM3/LM5* | N3/N4* | CE3 | EN3 |

| VITA classical A1–D4 shades | OPAQUE | MARGIN | LUMINARY | NECK | CERVICAL | ENAMEL |
|-----------------------------|---------|--------|----------|--------|----------|--------|
| A1 | OP A1 | M1/M3* | LM2 | N1 | CE1 | EN1 |
| A2 | OP A2 | MN/M3* | LM2 | N1/N2* | CE1/CE2* | EN1 |
| A3 | OP A3 | M3 | LM3/LM6* | N1/N3* | CE2 | EN1 |
| A3,5 | OP A3,5 | M3/M5* | LM3/LM6* | N3 | CE1/CE3* | EN2 |
| A4 | OP A4 | MN/M5* | LM2/LM5* | N1/N5* | CE3 | EN2 |
| B1 | OP B1 | MN/M2* | LM1/LM2* | N1 | CE1 | EN2 |
| B2 | OP B2 | M2/M3* | LM2 | N1 | CE1/CE2* | EN2 |
| B3 | OP B3 | M3 | LM3/LM6* | N1/N2* | CE2 | EN2 |
| B4 | OP B4 | M3 | LM3/LM6* | N1/N3* | CE2/CE3* | EN2 |
| C1 | OP C1 | MN/M2* | LM2 | N1 | CE1 | EN2 |
| C2 | OP C2 | M2/M5* | LM2/LM6* | N1/N5* | CE1 | EN2 |
| C3 | OP C3 | M2/M5* | LM6 | N1/N5* | CE1/CE2* | EN1 |
| C4 | OP C4 | M5 | LM5/LM6* | N5 | CE3 | EN1 |
| D2 | OP D2 | M2/M5* | LM2/LM6* | N1/N5* | CE1/CE2* | EN2 |
| D3 | OP D3 | M3/M5* | LM6 | N1/N5* | CE2 | EN2 |
| D4 | OP D4 | M2/M3* | LM3/LM6* | N1/N5* | CE2/CE3* | EN2 |

* Mixing ratio 1:1

| | | | |
|---|--|---------|-----------------------|
| VITA VMK Master® WASH OPAQUE – suitable for masking substructures and achieving restorations with more intense or warmer shades | | W0 | golden-orange |
| | | | |
| VITA VMK Master® OPAQUE – for masking the substructure material | | OP0–OP5 | VITA SYSTEM 3D-MASTER |
| | | A1–D4 | VITA classical |
| | | | |
| VITA VMK Master® OPAQUE DENTINE – supports the shade effect if only little space is available – to be used in the gingival area to avoid loss in color of pontics | | OM1–5M3 | VITA SYSTEM 3D-MASTER |
| | | A1–D4 | VITA classical |
| | | | |
| VITA VMK Master® DENTINE – shade-bearing material to build up the ceramic restoration according to natural teeth | | OM1–5M3 | VITA SYSTEM 3D-MASTER |
| | | A1–D4 | VITA classical |
| | | | |
| VITA VMK Master® ENAMEL – incisal materials with matched shades to reproduce the shade effect of natural enamel | | EN1 | whitish |
| | | EN2 | yellowish-neutral |
| | | EN3 | reddish |
| | | | |
| VITA VMK Master® WINDOW – to increase the translucency and reduce the intensity of the shade, to be used in the unmixed or mixed state |  | WIN | transparent |
| | | | |
| VITA VMK Master® TRANSLUCENT – to reproduce various levels of transparency of the natural enamel and various translucent areas, 8 translucent shade nuances are available for individualization and characterization – these materials can be used for marginal ridges, wedges or discolorations of enamel |         | T1 | whitish |
| | | T2 | yellowish-brownish |
| | | T3 | pink |
| | | T4 | neutral |
| | | T5 | light blue |
| | | T6 | blue |
| | | T7 | grey |
| | | T8 | reddish |
| | | | |
| VITA VMK Master® OPAL TRANSLUCENT – translucent material with natural opalescence |  | OT1 | neutral |
| | | | |
| VITA VMK Master® PEARL TRANSLUCENT – pearly shine on the surface – especially for the reproduction of young and bleached teeth – is mixed with WINDOW and applied to the surface to brighten the dentine body |  | PLT1 | pearly-cream |
| | | | |

| | | | |
|--|---|------|--------------------|
| VITA VMK Master® NECK – perfect shade reproduction in the cervical area can be supported with the NECK materials – the use of NECK materials allows to achieve higher intensity of the shade and opacity |  | N1 | beige |
| |  | N2 | yellow |
| |  | N3 | yellow-orange |
| |  | N4 | orange |
| |  | N5 | khaki |
| |  | | |
| VITA VMK Master® MARGIN – for creating an esthetic transition zone of labially reduced metal copings – can be intensified with VITA INTERNO materials – (please read the information in the section "Application of a ceramic shoulder") |  | MN | neutral |
| |  | M1 | white |
| |  | M2 | beige |
| |  | M3 | yellow |
| |  | M4 | orange-reddish |
| |  | M5 | light brown |
| |  | | |
| VITA VMK Master® LUMINARY – highly fluorescent material to support and control the natural fluorescence, in particular in cases of thin layers |  | LM1 | white |
| |  | LM2 | sand |
| |  | LM3 | yellow |
| |  | LM4 | light brown-orange |
| |  | LM5 | light brown |
| |  | LM6 | light khaki |
| |  | | |
| VITA VMK Master® CERVICAL – the materials can be placed on the dentine or incisally on the enamel above the neck up to the approximal area to increase the effect of depth |  | CE1 | light yellow |
| |  | CE2 | light orange |
| |  | CE3 | golden yellow |
| |  | | |
| VITA VMK Master® DENTINE MODIFIER – "washed" in the dentine to intensify the shade – for coloring the inside to obtain effects of depth – for preparing mamelons in the incisal area and creating age-specific abrasion characteristics |  | DM1 | white |
| |  | DM2 | cream |
| |  | DM3 | yellow |
| |  | DM4 | orange |
| |  | DM5 | reddish |
| |  | DM6 | brownish-reddish |
| |  | DM7 | khaki |
| |  | DM8 | grey |
| |  | | |
| VITA VMK Master® GINGIVA – for accurate restoration of losses of soft tissue – can be used in the unmixed state or mixed with one another – materials are fired based on the parameters of the first and second dentine firing |  | G1 | dusky pink |
| |  | G2 | orange-pink |
| |  | G3 | pink-red |
| |  | G4 | brown-red |
| |  | G5 | reddish-black |
| |  | GOL | light |
| |  | GOD | dark |
| |  | | |
| VITA VMK Master® CORRECTIVE – for corrections after glaze firing |  | COR1 | neutral |
| |  | COR2 | beige |
| |  | | |



| VITA VMK Master® STANDARD SET 3D-MASTER* | | |
|--|---------|----------------------------|
| Basic set | | |
| Quantity | Content | Material |
| 1 | 12 g | WASH OPAQUE WO |
| 5 | 12 g | OPAQUE OP1–OP5 |
| 26 | 12 g | OPAQUE DENTINE 1M1–5M3 |
| 26 | 12 g | DENTINE 1M1–5M3 |
| 2 | 12 g | ENAMEL EN1, EN3 |
| 1 | 12 g | TRANSLUCENT T4 |
| 1 | 12 g | WINDOW WIN |
| 3 | 12 g | CERVICAL CE1–CE3 |
| 5 | 12 g | NECK N1–N5 |
| 2 | 12 g | CORRECTIVE COR1–COR2 |
| 2 | 50 ml | Modelling fluid |
| 1 | 50 ml | Opaque fluid |
| 1 | – | Shade guide STANDARD |
| 1 | – | Shade indicator 3D-MASTER |
| 1 | – | VITA Linearguide 3D-MASTER |
| – | – | Accessories |
| 1 | – | Working instructions |

* also available as VITA VMK Master 10-COLOR SET with the following 10 most common VITA SYSTEM 3D-MASTER shades:

1M2, 2L1.5, 2M1, 2M2, 2R2.5, 3L1.5, 3M1, 3M2, 3M3, 4M2

** each also available with PASTE OPAQUE



| VITA VMK Master® STARTER SET 3D-MASTER* | | |
|---|---------|-------------------------|
| Two-color set (2M2, 3M2) | | |
| Quantity | Content | Material |
| 2 | 12 g | OPAQUE OP2, OP3 |
| 2 | 12 g | OPAQUE DENTINE 2M2, 3M2 |
| 2 | 12 g | DENTINE 2M2, 3M2 |
| 1 | 12 g | ENAMEL EN1 |
| 1 | 12 g | TRANSLUCENT T4 |
| 1 | 50 ml | Modelling fluid |
| 1 | 50 ml | Opaque fluid |
| 2 | – | Shade tabs 2M2, 3M2 |
| 1 | – | Working instructions |

*also available with PASTE OPAQUE



| VITA VMK Master® BLEACHED COLOR SET* | | |
|--|---------|------------------------------|
| Ultra-bright colors for the reproduction of bleached teeth | | |
| Quantity | Content | Material |
| 1 | 12 g | OPAQUE OP0 |
| 3 | 12 g | OPAQUE DENTINE 0M1–0M3 |
| 3 | 12 g | DENTINE 0M1–0M3 |
| 1 | 12 g | ENAMEL EN1 |
| 1 | 12 g | TRANSLUCENT T4 |
| 1 | 50 ml | Modelling fluid |
| 1 | 50 ml | Opaque fluid |
| 1 | – | BLEACHED SHADE GUIDE 0M1-0M3 |
| 1 | – | Working instructions |

*also available with PASTE OPAQUE



| VITA VMK Master® STANDARD SET classical* | | |
|--|---------|--------------------------------------|
| Basic set | | |
| Quantity | Content | Material |
| 1 | 12 g | WASH OPAQUE W0 |
| 16 | 12 g | OPAQUE A1–D4 |
| 16 | 12 g | OPAQUE DENTINE A1–D4 |
| 16 | 12 g | DENTINE A1–D4 |
| 2 | 12 g | ENAMEL EN1, EN2 |
| 1 | 12 g | TRANSLUCENT T4 |
| 1 | 12 g | WINDOW WIN |
| 3 | 12 g | CERVICAL CE1–CE3 |
| 5 | 12 g | NECK N1–N5 |
| 2 | 12 g | CORRECTIVE COR1–COR2 |
| 2 | 50 ml | Modelling fluid |
| 1 | 50 ml | Opaque fluid |
| 1 | – | Shade guide STANDARD |
| 1 | – | Shade indicator VITA classical A1–D4 |
| 1 | – | VITA classical A1–D4 shade guide |
| – | – | Accessories |
| 1 | – | Working instructions |

*also available with PASTE OPAQUE



| VITA VMK Master® STARTER SET classical* | | |
|---|---------|-----------------------|
| Two-color set (A2, A3) | | |
| Quantity | Content | Material |
| 2 | 12 g | OPAQUE A2, A3 |
| 2 | 12 g | OPAQUE DENTINE A2, A3 |
| 2 | 12 g | DENTINE A2, A3 |
| 1 | 12 g | ENAMEL EN1 |
| 1 | 12 g | TRANSLUCENT T4 |
| 1 | 50 ml | Modelling fluid |
| 1 | 50 ml | Opaque fluid |
| 2 | – | Shade tabs A2, A3 |
| 1 | – | Working instructions |

*also available with PASTE OPAQUE



| VITA VMK Master® ADDITIONAL SET | | |
|--|---------|--|
| For individual effects and characteristics | | |
| Quantity | Content | Material |
| 8 | 12 g | TRANSLUCENT T1–T8 |
| 8 | 12 g | DENTINE MODIFIER DM1–DM8 |
| 6 | 12 g | LUMINARY LM1–LM6 |
| 6 | 12 g | MARGIN MN, M1–M5 |
| 1 | 12 g | OPAL TRANSLUCENT OT1 |
| 1 | 12 g | PEARL TRANSLUCENT PLT1 |
| 1 | 50 ml | Modelling fluid |
| 1 | – | TRANSLUCENT shade guide |
| 1 | – | DENTINE MODIFIER / LUMINARY shade guide |
| 1 | – | MARGIN / GINGIVA shade guide |



VITA VMK Master® GINGIVA SET*

Gingiva materials with a natural appearance

| Quantity | Content | Material |
|----------|---------|----------------------------|
| 5 | 12 g | GINGIVA G1–G5 |
| 2 | 12 g | GOL, GOD |
| 1 | — | MARGIN/GINGIVA shade guide |

*also available with PASTE OPAQUE

The following quantities are also available individually:

| Materials | 5 g | 12 g | 50 g |
|---|-----|------|------|
| WASH OPAQUE | 7g | x | x |
| OPAQUE | x | x | x |
| OPAQUE DENTINE, DENTINE ENAMEL, TRANSLUCENT T4, WINDOW | — | x | x |
| TRANSLUCENT, LUMINARY, PEARL TRANSLUCENT, NECK, OPAL TRANSLUCENT, MARGIN, CERVICAL, DENTINE MODIFIER, GINGIVA, CORRECTIVE | — | x | — |
| GINGIVA OPAQUE | x | x | — |



VITA MODELLING FLUID

For mixing all dentine, incisal and additional materials.
VITA MODELLING FLUID avoids rapid drying of the ceramic material.
Moreover increased plasticity during layering is achieved.



VITA MODELLING FLUID RS

Red special liquid for mixing all dentine, incisal and additional materials. The smooth consistency of VITA MODELLING FLUID RS allows extended and wet processing whilst ensuring good stability and the fluid is therefore particularly suited for large-sized restorations and multi-unit bridges.



VITA OPAQUE FLUID

For mixing all powder opaque materials.

⚠ Note: Do not use for mixing the dentine materials!



VITA PASTE OPAQUE LIQUID

Liquid for diluting the consistency of the paste and, if required, for re-mixing the paste opaque materials.



VITA HIGH SILVER MODELLING LIQUID

Anti-greening liquid for high silver content alloys (silver content >30%).
Not included in the assortment!



VITA AKZENT®

For reproducing natural shade effects and anomalies during surface characterization. The stains feature a fine-grain structure, intense shade and are slightly fluorescent and particularly stable and can be mixed with one another.

VITA AKZENT FLUID

For mixing VITA AKZENT stains, VITA AKZENT GLAZE and VITA FINISHING AGENT.

VITA FINISHING AGENT

Finishing agent with very fine consistency for natural surface luster. The finishing agent produces a transparent coat and a translucent shade. It has a considerably lower masking capacity than a glaze material.





VITA INTERNO®

Materials for perfect reproduction of in-depth shade effects. They feature intense shades and high fluorescence to achieve tremendous brilliance of the shades. VITA INTERNO materials can be "washed" in (in the non-mixed state) or mixed with OPAQUE DENTINE, DENTINE, ENAMEL and TRANSLUCENT.


VITA INTERNO FLUID

For mixing the VITA INTERNO materials.

| The following products require hazard label information: | | |
|--|--|---|
| VITA OPAQUE FLUID | Caustic Causes burns. Keep product well sealed and out of children's reach. When using, do not eat or drink. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point. 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). |  |
| VITA SPRAY-ON LIQUID VITA SPRAY-ON INDICATOR LIQUID | Highly flammable Keep container tightly closed at a well-ventilated place. Keep away from sources of ignition - no smoking. Do not empty into drains. This material and its container must be disposed of as hazardous waste. |  |

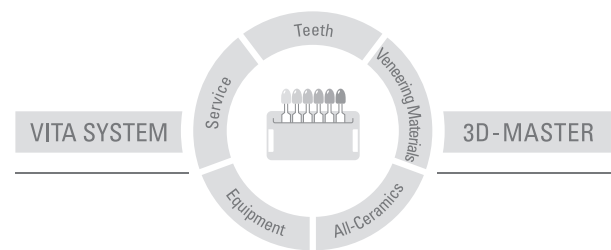
For detailed information please refer to the respective safety datasheets!

Information on the subject can be found on our website under FAQs about metal-ceramics.

| | | |
|------------------------|--|---|
| Safety clothing | 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. |  |
|------------------------|--|---|

VITA VMK MASTER veneering ceramic is available in VITA SYSTEM 3D-MASTER and VITA classical A1-D4 shades. Shade compatibility with all VITA SYSTEM 3D-MASTER and VITA classical A1-D4 materials is ensured.

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: 07.12

After the publication of these working instructions any previous versions become obsolete. The current version can be found at www.vita-zahnfabrik.com

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

VITA VMK Master®

VITA AKZENT®

VITA INTERNO®

US 5498157 A · AU 659964 B2 · EP 0591958 B1

VITA

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