VITA YZ T / **VITA YZ** HT

Working Instructions

VITA shade determination | VITA shade communication | VITA shade reproduction | VITA shade control

Date of issue 08.15

VITA shade, VITA made. VITA

Partially yttrium-stabilized zirconia
for high-temperature sintering
VITA YZ T (Translucent Zirconia)
VITA YZ HT (High Translucent Zirconia)

VITA CAD/CAM MATERIALS – for best solutions. Proven a million times over.

VITA YZ T and VITA YZ HT are porously presintered zirconia materials partially stabilized with yttrium oxide (Y-TZP, yttria stabilized tetragonal zirconia polycrystal). Easy to process in this condition, they are used to mill enlarged crown and bridge frameworks as well as fully-anatomical restorations using the CAD/CAM system.
The shrinkage which takes place during the subsequent sintering process in a special high-temperature furnace (e.g. VITA ZYRCOMAT 6000 MS) is precisely calculated. High-strength, precision-fit restorations are the result.

Technical and physical data VITA YZ T / VITA YZ HT*

Property	Unit	Value
Coefficient of thermal expansion - CTE (20 - 500°C)	$10^{-6} \cdot K^{-1}$	approx. 10.5
Chemical solubility (ISO 6872)	$\mu g/cm^2$	< 20
Density after sinter firing	g/cm^3	approx. 6.05
Flexural strength (ISO 6872)	MPa	approx. 1,200
Weibull modulus	–	approx. 14

* 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 obtained.
More technical/physical data about VITA YZ T and YZ HT can be found in the Technical and Scientific Documentation No. 10160.

Block geometries*	**VITA YZ** T :	20/19 :	20 x 19 x 15.5 mm
		40/19 :	39 x 19 x 15.5 mm
		55 :	55 x 15.5 x 19 mm
		65/25 :	65 x 25 x 22 mm
	VITA YZ HT :	20/19 :	20 x 19 x 15.5 mm
		40/19 :	39 x 19 x 15.5 mm
		55/19 :	55 x 19 x 19 mm
		65/25 :	65 x 25 x 22 mm

Disc geometries*	**VITA YZ** T :	Ø 98.4 mm in heights of:	10 mm, 12 mm, 14 mm, 16 mm, 18 mm, 20 mm, 25 mm
	VITA YZ HT :	Ø 98.4 mm in heights of:	10 mm, 12 mm, 14 mm, 16 mm, 18 mm, 20 mm, 25 mm

Range of shades*	**VITA YZ** T^{white}	white; non-colored
	VITA YZ T^{color}	LL1/light, LL2/medium, LL3/intense
	VITA YZ HT^{white}	white; non-colored
	VITA YZ HT^{color}	A1, A2, A3, 1M2, 2M2, 3M2

* The range of VITA CAD/CAM material versions/geometries/shades available may vary for individual CAD/CAM system partners or systems.

Indication

VITA YZ are zirconia blanks for the fabrication of single tooth and multi-unit substructures and for fully anatomical dental restorations in the anterior and posterior areas.

Overview of indications

						
VITA YZ T	●	–	–	–	–	–
VITA YZ HT	●	–	–	–	–	–

						
VITA YZ T	○	○	○	○	●	●
VITA YZ HT	○	○	○	●	●	●

	 *	 *	 *	 *
VITA YZ T	○	○	●	●
VITA YZ HT	○	●	●	●

* no more than 2 pontics — not possible ○ possible ● recommended

Contraindication

- more than two adjacent bridge pontics
- two or more cantilever bridge pontics
- parafunction for veneered restorations, in particular for teeth grinders and clenchers
- in cases of inadequate oral hygiene
- inadequate results of preparation
- insufficient remaining natural tooth substance

Successful processing of VITA YZ T and VITA YZ HT is not guaranteed in the following cases:

- Failure to observe the required minimum wall thicknesses and connector cross-sections
- Milling the blocks and discs in non-compatible CAD/CAM systems
- Veneering with veneering ceramics not suitable for veneering zirconia substructures with a CTE of approx. 10.5

Minimum wall thicknesses and connector cross-sections

VITA YZ T / VITA YZ HT		Minimum wall thickness** in mm	Connector cross-sections in mm*
Anterior and posterior crowns	incisal / occlusal circumferential	0.5 0.4	–
Anterior bridge substructures with one pontic	incisal circumferential	0.5 0.5	7
Posterior bridges with one pontic	occlusal circumferential	0.6 0.5	9
Anterior bridge substructures with two pontics	incisal circumferential	0.6 0.5	9
Posterior bridges with two pontics	occlusal circumferential	0.7 0.6	12
Cantilever bridges*	incisal / occlusal circumferential	0.7 0.5	12

* Cantilever bridge unit should be modelled approx. 1/3 narrower in its vestibular/oral dimension.

** The minimum wall thicknesses indicated refer to fully sintered restorations. Higher wall thicknesses may be required for large-span bridge structures to counteract vibration during the grinding/milling process. The thicker wall can be reduced again with the handpiece after the grinding/milling process (see also page 12).

Layer thicknesses for ceramics

When preparing a ceramic veneer, a uniform layer thickness across the entire surface to be veneered must be ensured. The entire thickness of the ceramic layer, however, should not exceed 2 mm (the optimum layer thickness ranges from 0.7 to 1.2 mm).

The following materials are suitable for individualization and characterization of VITA YZ T and VITA YZ HT:

- **Staining technique:** VITA AKZENT Plus for characterizing the shade of fully anatomical restorations.
- **Layering/cut-back technique:** VITA VM 9 for individualizing crown and bridge substructures.
- **Press-over technique:** VITA PM 9 for pressing onto crown and bridge substructures.

Note:

Dental treatment and the integration of a dental-technical restoration entail the general risk of iatrogenic damage to hard tooth substance, pulp and/or oral soft tissue. In addition, the use of bonding systems and the integration of dental-technical restorations entail the general risk of postoperative hypersensitivity.

In the event of non-compliance with the processing instructions of the products in use, the product characteristics can not be ensured so that product failure and irreversible damage to the natural hard tooth substance, pulp and/or oral soft tissue may result.

A chamfer or shoulder with a rounded inner angle are suitable. The vertical preparation angle should be at least 3°. All transitions from the axial to the occlusal or incisal surfaces should be rounded.
Homogeneous, smooth surfaces are recommended.

More information on preparation guidelines can be found in the brochure "Clinical Aspects" No. 1696.

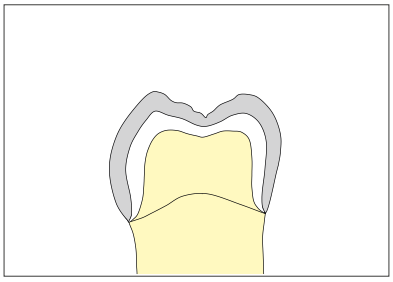
Shoulder preparation or chamfer preparation

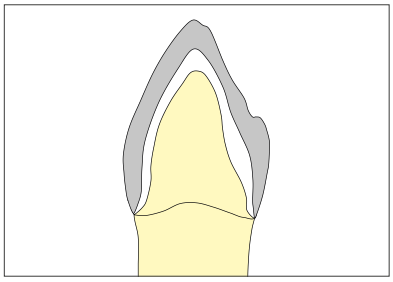
Tangential preparation – contraindicated

Incorrect chamfer preparation – contraindicated

In order to ensure lasting clinical success of restorations made of VITA YZ T and VITA YZ HT, the minimum wall thicknesses of substructures and fully anatomical and reduced restorations need to be adhered to.
Sharp edges on the substructure should generally be avoided.

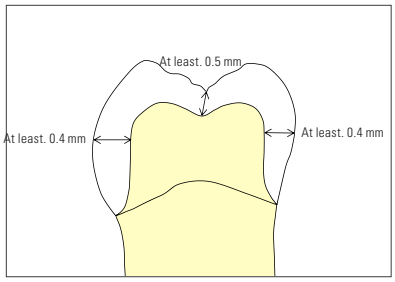
Substructure design for veneered restorations

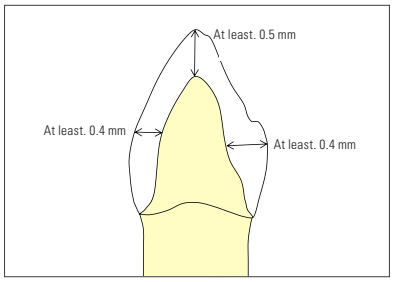


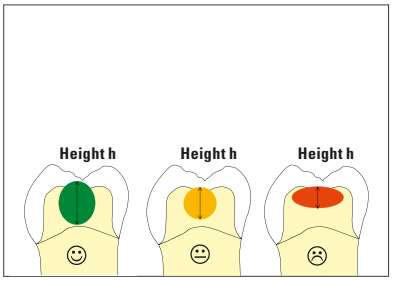


- Reduced tooth shape
- Cusp supported (following the anatomical progression)
- Thickness of veneer max. 2 mm

Design of fully anatomical restorations







Aspects which should be taken into account when designing connector surfaces of bridge substructures:

1. The height h of the connector surfaces should be as large as possible.
2. The height h should be larger than, or at least equal with the width.

The connector surfaces of bridge substructures must be concavely rounded. Sharp corners and edges are to be avoided.

Important!
Stability and function should be given priority over esthetics.

Note on implant-supported restorations:
Depending on the fabrication process of the abutments, sharp edges may exist which may cause fracture of the respective substructures of zirconia crowns and bridges during the period of wearing.
Sharp edges must always be avoided for ceramic restorations.

Sirona inLab MC XL

VITA YZ T / **VITA YZ** HT

SYSTEM SOLUTIONS with a specific holder system for:

- inLab System (Sirona Dental GmbH):
  blocks made of VITA YZ HT have been approved for milling in the inLAB MC XL system, inLab software version 15.0 or higher.
  To be able to process (grinding and/or milling) VITA YZ T with the inLab system, select VITA In-Ceram YZ for software versions < 15.0. VITA In-Ceram YZ block sizes can also be selected under VITA YZ T in software version 15.0.
- CEREC System (Sirona Dental GmbH):
  VITA YZ HT has been approved for milling in the CEREC MC XL system from CEREC software version SW 4.4 or higher.

Example: CORiTEC 250i (imes-icore GmbH)

UNIVERSAL SOLUTIONS* in universal disc geometry (Ø 98.4 mm) for the CAD/CAM-systems:

- CORiTEC line (imes-icore GmbH)
- ULTRASONIC line (SAUER GmbH / DMG Mori Seiki AG)
- RXD line (Röders GmbH)
- inLab MC X5 (Sirona Dental GmbH)

* VITA YZ T and VITA YZ HT discs can essentially be processed in all open CAD/CAM systems that can process discs with a diameter of 98.4 mm (including the circumferential groove).

Processing of the restoration is continued after the CAD/CAM process.
Various options are available for this purpose.

The most important steps of the fabrication of monolithic, substructure and composite bridge solutions are described on the following pages.

Monolithic solutions

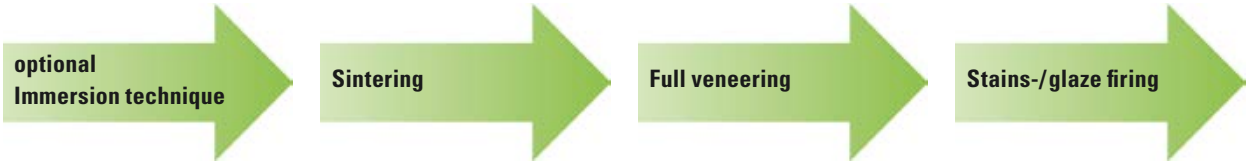
- **Polishing**

- **Coloring technique**

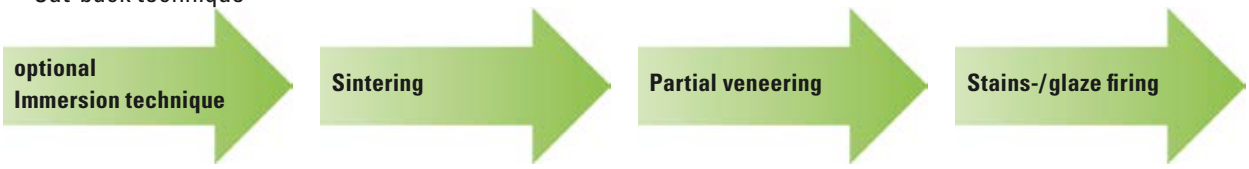
Substructure solutions

- **Layering Technique**

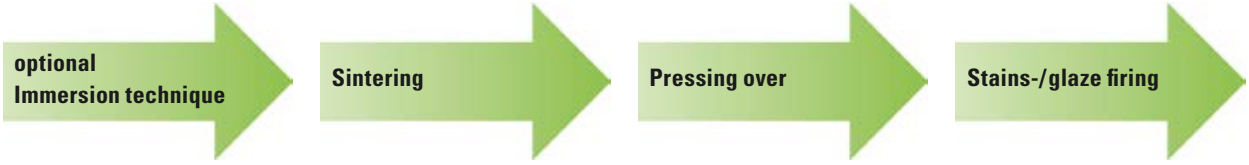
  Full veneering



  Cut-back technique

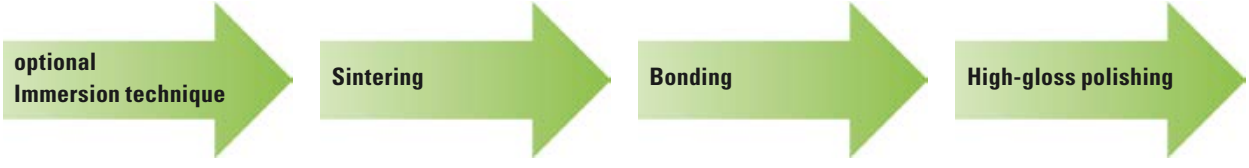


- **Press-over technique**



Composite bridge solution

- **Rapid Layer Technology** (CAD/CAM fabrication of two-element bridge*)



* Based on Sirona inLab software > 3.8

Reworking the milled restoration

After completion of the milling process and before sintering, the restoration must be carefully cut off from the block holder or the disc using a diamond milling tool or a tungsten carbide bur and then the attachment point must be smoothed.

The more thickly milled margins must be reduced carefully.
Fissures can be adjusted using a thin pointed tool. Bridge restorations may not be separated subsequently using a diamond separating disc since this may result in predetermined breaking points on the connectors.

Functional surfaces are completely retained in the zirconia when using the cut-back technique or they need to be removed generously and fully coated subsequently (ensure minimum layer thicknesses).

Important:
Remove any traces of milling residue before sintering to avoid inaccuracy of fit caused by milling dust.

Depending on the software, various types of sintering supports are required for large-span bridge structures to ensure sintering without any deformation. However, if this support consists only of a remaining piece of the block/disc, the volume should be reduced to guarantee even heating up during the sintering process.

⚠ The individual software manufacturer's instructions on the design of the sintering support need to be observed.

In order to facilitate high-gloss polishing of fully anatomical restorations, it is recommended to smooth the milled restoration with a smoothing instrument (e.g. EVE Universal wheel, black) or to prepolish the restoration with polishers that do not contain silicone.
Only coarse rubber polishers should be used for restorations that are colored manually to avoid "clogging up" the surface and uneven coloring.

The following procedure is recommended for finishing restorations made of VITA YZ:

- Whenever possible, adjustments of VITA YZ restorations should always be performed in the non-sintered state.
- Use only suitable milling tools, low speed and little pressure. Fine diamonds or fine-cut tungsten carbide burs or zirconia stones are ideally suited.
- Avoid overheating the ceramic.
- When using liquids: Use a fine diamond tool to grind the entire occlusal surface and move along the fissures carefully to open the surface to absorb liquid.
- Make sure that the minimum thickness of the restoration is maintained after reworking (see page 7).
- Carefully reduce marginal edges. The restorations must not be too thin after finishing.
- The interdental area of bridge restorations should not be separated subsequently using a separating disc since this may result in predetermined breaking points on the connectors.
- After sintering, milling dust is removed with a brush or oil-free compressed air from the entire restoration.
- The restorations must not be sandblasted or cleaned with a steam jet before sintering!

Sintering in the high speed sintering furnace VITA ZYRCOMAT 6000 MS

The VITA sintering programs are prestored under the YZ material key of the VITA vPad comfort software, serial number 2420155636 or higher and the VITA vPad excellence software, serial number 2320152050 or higher.

VITA YZ HT programs with a final sintering temperature of **1450 °C**:

- YZ HT Universal - conventional sintering program, duration: approx.4:40 hours
- YZ HT Universal Pre-Dry SL - conventional sintering with integrated predrying phase
- YZ HT Speed - HighSpeed sintering in 80 minutes
- YZ HT Speed Pre-Dry SL - HighSpeed sintering with integrated predrying phase when using YZ HT Shade Liquids in a program sequence
- Pre-Dry YZ HT SL - predrying program for YZ HT Shade Liquids

VITA YZ T programs with a final sintering temperature of **1530 °C**:

- YZ T Universal - conventional sintering program, duration: approx. 4:40 hours
- YZ T Universal Pre-Dry CL - conventional sintering with integrated predrying phase
- YZ T Speed - HighSpeed sintering in 80 minutes
- YZ T Speed Pre-Dry SL - HighSpeed sintering with integrated predrying phase when using YZ T Coloring Liquids in a program sequence.
- Pre-Dry YZ T CL - drying program for YZ T Coloring Liquids

Important

VITA YZ T and VITA YZ HT can be sintered in all high-temperature furnaces, which can be operated with the sintering parameters indicated above. The user must observe the respective instructions of the furnace manufacturer. VITA does not grant a warranty or accept any liability for damage resulting from processing VITA YZ T and VITA YZ HT in furnaces of other manufacturers.

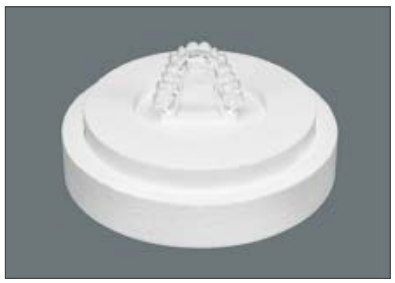
General information on sintering in high-temperature furnaces

The MS sintering dish needs to be used for sintering in the VITA ZYRCOMAT 6000 MS. This sintering dish is placed in the center of the recess on the firing tray.

Fill MS sintering dish with 3 layers of sintering beads and place anterior crowns into the bed of sintering beads with the labial or lingual surface facing downward; ideally, anterior bridge substructures should be placed on the incisal surface and posterior crowns and bridges with the occlusal surface facing downward.
It is recommended to sinter bridges in the MS sintering dish. Make sure that the entire surface of the bridge restoration is supported by the bed of sintering beads to avoid deformation. Support of the bridge pontic is required.

The restorations should not come into contact with one another during the sintering process. The sintering beads can also be placed directly into the sintering base when sintering large restorations or several restorations.

⚠ Care should be taken to prevent sintering beads from becoming "jammed" in the connector areas of the bridges.



VITA YZ bridges with up to 7 units can be sintered in the MS sintering dish. Bridges or bridge substructures with 8 to 14 units are placed directly in the center of the firing tray without MS sintering dish and sintering beads using the corresponding sintering support (according to the instructions of the manufacturer of the system or software).

Note: The supports for sintering dishes must not be used as a lid for supporting the MS sintering dish. Stacking several dishes is not possible.

High-speed sintering

Restorations with up to 14 units made of VITA ZY T and VITA YZ HT can be sintered in the high-speed mode. Conventional sintering, however, is recommended for bridges with more than 10 units.

Note: Only the MS sintering dish may be used in the high-speed mode.

High-speed sintering in combination with liquids

Restorations with up to four units that are colored manually with VITA YZ HT SHADE LIQUID can be sintered in the high-speed mode. Manually colored VITA YZ HT restorations must first be completely dried using the Pre-Dry program or under an infrared lamp (power: 250 watts).

Restorations with up to four units that are colored with YZ T COLORING LIQUID can also be sintered in the high-speed mode in the VITA ZYRCOMAT 6000 MS after a drying time of 30 minutes at room temperature or using the Pre-Dry program.

To prevent possible contamination of the furnace chamber and to avoid affecting the shade result of sintered objects, we recommend the use of MS sintering dish as a lid during each sintering process with liquids.
It is recommended to use a separate MS sintering dish as a lid to increase the durability of the material. The supports for sintering dishes are evenly distributed on the sintering dish or the sintering base and the MS sintering dish is placed on it with the bottom facing upward.

Note: The supports for sintering dishes must not be used as a lid for supporting the MS sintering dish.
The MS sintering dish is not suitable for stacking several dishes (double-stacked sintering).

Reworking and surface treatment after sintering

Subsequent processing of the sintered substructure should generally be avoided.
The surface structure of ceramic materials is decisive for their flexural strength. Subsequent processing of sintered VITA YZ T and VITA YZ HT restorations with abrasive instruments is to be avoided, particularly in the area of connector cross-sections of bridges.
Mechanical surface processing may cause damage to the structure in the sintered condition. This can lead to phase transformation over a large area of the zirconia and to surface tensions due to distortion of the crystal lattice and to cracks and late cracks in the veneer after seating the restoration. As a result, surfaces that are to be individualized with VITA VM 9 (layering or cut-back techniques) or pressed over with VITA PM 9 (press-over technique) must not be sandblasted.

After a sintering process and a cooling phase of approx. 10 minutes down to 200 °C, the restoration can be removed and the fit can be checked.
The sintering support of bridge restorations is cut off very slowly and carefully after they have cooled down completely.

Milled restorations should preferably be adjusted before sintering. However, if reworking is required, the following basic aspects need to be observed:

- Corrections need to be made with diamond instruments for wet grinding under water cooling and at a low pressure.
- Use new fine-grained diamonds with red color coding (fine = 27-76 µm) or less (extra-fine, yellow 10-36 µm or ultra-fine, white 4-14 µm).
- It is also possible to process the substructure using soft, diamond-coated rubber polishers and a handpiece with slow speeds and low pressure. Make sure to use only PU-bonded (polyurethane) polishers. Residues of these polishers can be easily removed and burn out without leaving any residue. When using silicone-bonded polishers, it may be impossible to remove abraded silicone. This may impair the bonding area towards the veneering material.
- The instrument must lie flat on the surface and chattering must be avoided.

⚠ To avoid phase transformation, surfaces to be veneered must not be sandblasted.

Important:
After grinding we recommend thermal treatment (regeneration firing) of the substructure to reverse any phase transformations on the surface.

⚠ Any microcracks which have arisen cannot be regenerated.

Predry. °C	→ min.	↗ min.	↗ °C/min.	approx. Temp. °C	→ min.	VAC min.
500	0.00	5.00	100	1000	15.00	–

High-gloss polishing

Careful high-gloss polishing of the occlusal surface is always urgently required for the overall functional effect of the restoration since the surface roughness of unpolished zirconia causes increased loss of substance (abrasion) on the antagonist. High-gloss polished zirconia, however, does not cause any loss of substance on the antagonist*) and is not abraded by the antagonist either. Abrasion, however, always occurs in the natural dentition.

By applying a glaze layer to the zirconia, natural abrasion is imitated. This way premature contacts in the zirconia restoration are avoided.

Reason: If the ceramic that has been fused to the substructure is subject to abrasion or has been ground off, the zirconia is exposed. If it is polished to high gloss, it will not have any abrasive properties.

Recommendation for surface treatment of fully anatomical VITA YZ T or VITA YZ HT restorations:

- Double glaze layer; previously high-gloss polishing of areas/surfaces which are in occlusion is required

- Occlusal cut-back and individualization with VITA VM 9 materials (cut-back technique)

We recommend the use of the VITA SUPRINITY Polishing Sets technical and clinical for high-gloss polishing:

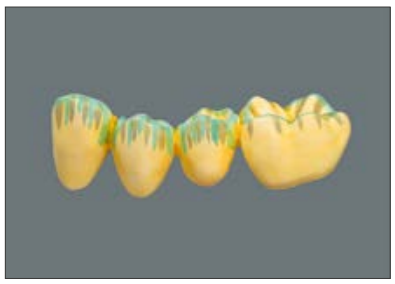
- VITA SUPRINITY Polishing Set technical (extraoral) with instruments for the handpiece
- VITA SUPRINITY Polishing Set clinical (intraoral) with instruments for the contra-angle

These sets are particularly suitable for efficient and time-saving polishing of VITA SUPRINITY restorations and, thanks to the PU-free material, they are perfectly suited for polishing fully anatomical zirconia restorations.
The polishing sets include all instruments for well-coordinated polishing (technical: extraoral; clinical: intraoral).

1. Prepolishing the ground areas/surfaces with the special diamond-coated, pink rubber polishers of the VITA SUPRINITY Polishing Set technical/clinical at a speed of 7,000 – 12,000 rpm.

2. High-gloss polishing is subsequently carried out with the diamond-coated, grey rubber polishers at a reduced speed of 4,000 – 8,000 rpm.

*) Abrasion tests, University Clinic of Regensburg, PD Dr. Rosentritt
Report: Verschleißuntersuchungen an keramischen Werkstoffen (Abrasion tests of ceramic materials); Report No. 219_3; 02/2013



Brush technique with VITA YZ HT SHADE LIQUID

Coloring of monolithic restorations

The VITA YZ HT SHADE LIQUIDs are perfectly matched with the highly-translucent VITA YZ HT White and for this reason, are suitable for coloring using the brush technique. The best results are obtained with the coloring liquids when this combination is used.

The liquids can also be used in combination with VITA YZ HT Color restorations. However, due to the pigments that are already contained in the zirconia, deviations in terms of shade may occur.

⚠ VITA YZ HT SHADE LIQUID is not suitable for coloring VITA YZ T.

VITA YZ HT SHADE LIQUID

VITA classical A1–D4 shades: A1, A2, A3, A3.5, B2, C2, D2
VITA SYSTEM 3D-MASTER shades: 1M1, 1M2, 2L1.5, 2M2, 3M2, 3M3, 4M2

VITA YZ HT SHADE LIQUID additional shades

Pink:	for gingival areas (Gingiva)
Blue:	for effect of depth in the incisal area and bluish ridges
Grey:	for transparent areas also in the region of cusps
Chroma A-D:	for interdental and cervical areas and to intensify the fissures

VITA YZ HT SHADE LIQUID Stabilizer

After some time, the zirconia may become blotchy during coloring. This is due to evaporation of the stabilizer in the liquid. In this case, you should once again add 5% of the stabilizer to the liquid.

VITA YZ HT SHADE LIQUID Indicator

(adding shade pigments to the mixture):
After some time the indicator shade pigments that have been mixed with the product in order to achieve improved perceptibility of the dentin shade may evaporate (e.g. if stored in too bright a location). These shade pigments can be added again using SHADE LIQUID Indicator (1 cm of liquid each in the bottle corresponds to approx. 1-2 drops of SHADE LIQUID Indicator).

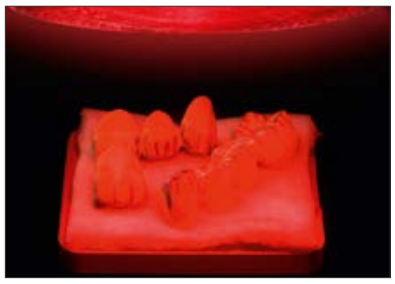
Using the brush technique:
Make sure that the surface of the restoration is not too smooth in order not to affect the penetration of the liquid. To achieve consistent coloring results, any dust or grease must be removed from the restorations before use.
When using coolants or lubricants during the CAM process, a cleaning cycle in a dental furnace (see page 42) is required before coloring to remove them from the porous structure.

⚠ Do not wet the restoration before coloring.
Always shake the bottle thoroughly before use!
The use of disposable gloves is recommended to obtain a surface free from grease.

Dip a **metal-free brush** (YZ HT SHADE LIQUID Brush) shortly into the liquid and then wipe off on the edge of the bottle or dab with a tissue. Use the same procedure for every brush stroke.
Then paint the restoration using the brush in accordance with the predefined pattern. In order to prevent the liquid from being thinned out and to avoid contamination, always wash and dry the brush thoroughly after use and whenever a different color is used.
Seal the bottle tightly after coloring.

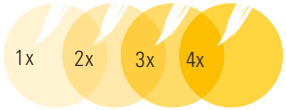
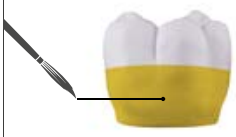
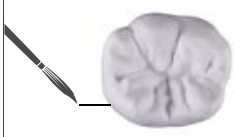
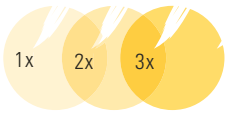
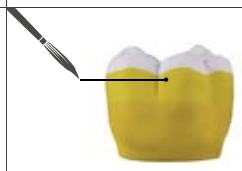
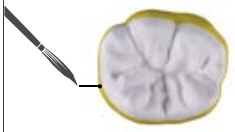
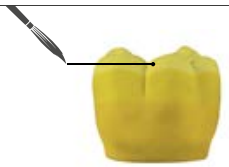
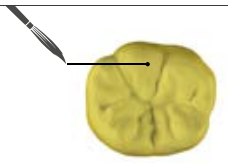
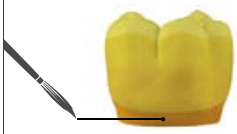
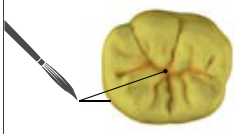
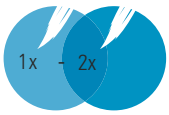
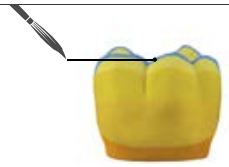
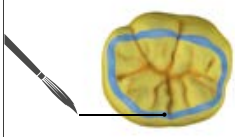
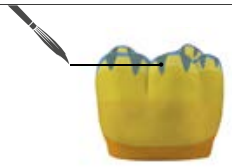
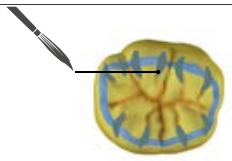
Note:
Keep the brush and the liquid away from metal (e.g. modeling instruments, devices, etc.) in order to prevent contamination.
If using additional shades, make sure to clean the brush thoroughly in order to prevent contamination with other shades.

Immersion technique possible (monochrome coloring):
Fill the SHADE LIQUID into a clean, dry and dark container. Fill the container with liquid to make sure that the restoration is completely covered.
Use metal-free tweezers to dip the cleaned restoration into the coloring liquid for 15 seconds. Then remove the restoration and dab carefully with a tissue to prevent the formation of puddles.
Afterwards seal the container properly. Do not refill any used liquid into the bottle since it may be contaminated with ceramic dust. The liquid can be stored in the container up to one week; then it must be poured away and new liquid must be used. Disposal in accordance with the regulations must be ensured.



Dry the restoration under an infrared lamp (power: 250 watts) for 45 minutes at approx. 70 °C.
In the case of larger, dense structures (diameter larger than 10 mm), it is recommended to extend the predrying time to 60 minutes. Alternatively, the heating time (minutes) can be extended in the Pre-Dry program.

Graphic representation of the brush technique using the example of a posterior tooth

SHADE LIQUID	Number of brush strokes	buccal	occlusal
A2			
A2			
A2			
Chroma A			
Blue			
Grey			

The milled/ground restoration after the CAM process. The lugs were already removed and necessary adjustments (by grinding) were made.
The restoration must be free from any dust and grease. A cleaning cycle in a dental furnace may be required.

Always apply the liquid ...

... to all bridge units starting from the neck. Then start staining the body.

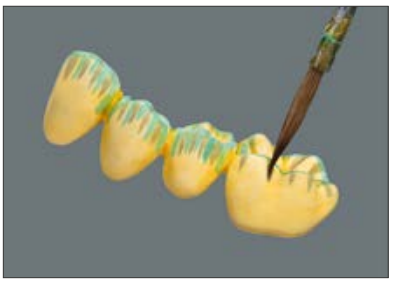
When applying stains to the body, always use the same procedure for each unit.

Finally, the incisal area is stained step by step.

To avoid a white border after sintering, it is recommended to stain the inner side of the restoration (approx. 1 mm).

Various additional stains, such as Chroma, Blue or Grey, are available for effects or to intensify the neck area.

The use of the chroma stains enables perfect shaping of fissures or accentuating the tooth neck. The incisal area can be outlined with Blue and Grey. A whitish result can be achieved when using a large quantity of Blue.



The completed restoration can be sintered under an infrared lamp after drying.

Completed restoration after sinter firing.

Any necessary adjustments (by grinding) need to be made before glaze firing.

For final characterization, the VITA AKZENT Plus stains are used to paint the restoration.

Staining technique with VITA AKZENT Plus

Recommendation for surface treatment of fully anatomical VITA YZ T or VITA YZ HT restorations:
Double glaze layer; previously high-gloss polishing of areas/surfaces which are in occlusion is required.

Description of the stains and finishing agents

The stains of the VITA AKZENT Plus kit EFFECT STAINS and BODY STAINS are available for characterization of VITA YZ restorations. More information on processing can be found in the Working Instructions No. 1925.

VITA AKZENT Plus EFFECT STAINS

- Highly chromatic and opaque stains
- To reproduce individual shades and to adapt the shade to the characteristics of a natural shade
- When applied thickly, they will cover the underlying base shade completely.

Designation	Shade		Area of application
ES01	white		Body area
ES02	cream		
ES03	lemon-yellow		
ES04	sunshine yellow		
ES05	orange		
ES06	russet		
ES07	khaki		
ES08	pink		Gingival area
ES09	dark red		
ES10	lilac		Incisal area
ES11	blue		
ES12	grey-blue		
ES13	grey		
ES14	black		–

VITA AKZENT Plus BODY STAINS

- Translucent finishing materials that have the effect of a thin color filter on the base material
- Especially for subtle characterization
- Color changes and color shifts towards reddish, yellowish, orange, brownish or grey-greenish
- If applied several times, the intensity of the color is increased.

Designation	Shade		Area of application
BS01	yellow		Body area
BS02	yellow-brown		
BS03	orange		
BS04	olive-grey		
BS05	grey-brown		

Staining technique with VITA AKZENT Plus

Recommendation for surface treatment of fully anatomical VITA YZ T or VITA YZ HT restorations:
Double glaze layer; previously high-gloss polishing of areas/surfaces which are in occlusion is required.

Characterizing VITA YZ HT restorations with VITA AKZENT Plus stains

After sintering, the areas of the restoration that are in occlusion are high-gloss polished. Then a double glaze layer is applied.

Glaze firing may not be carried out at temperatures above 850 °C for monolithic VITA YZ HT restorations that were colored manually using VITA YZ HT SHADE LIQUID. For this purpose, the use of VITA AKZENT Plus GLAZE LT is recommended.

To achieve optimum wettability of the surface, glaze material firing can be carried out first. Then the characterizing stain can be fixed on the restoration in a stains fixation firing cycle.

As usual, stains and glaze material can be used together for the first glaze layer. Then glaze firing is carried out according to the firing parameters.

The complete restoration is coated with glaze material during second glaze firing. Body Stains or Effect Stains can be used to intensify the cervical and neck areas.

Use ES10-ES13 to reproduce the incisal area.
Then the restoration is fired according to the instructions.

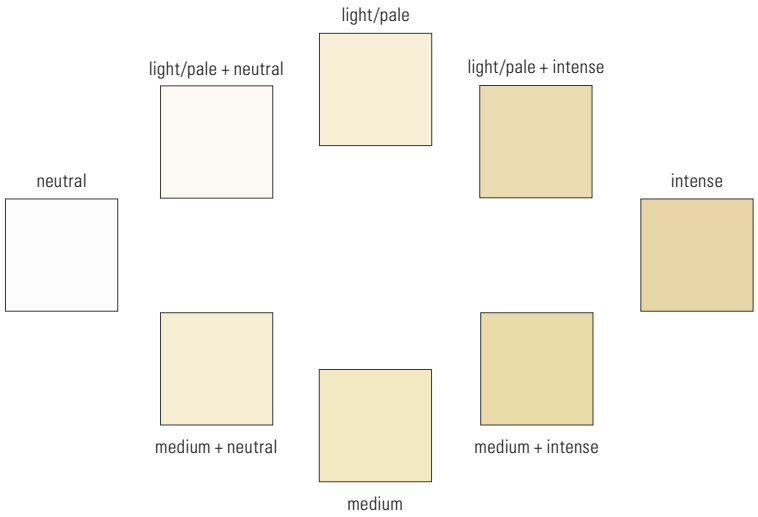
Characterized bridge after second glaze firing.

Immersion technique - VITA YZ T COLORING LIQUID
Coloring substructures
Liquid for coloring milled VITA YZ T substructures before sintering. YZ T COLORING LIQUID is available in 4 different colors and matched in a way to enable the reproduction of all VITA SYSTEM 3D-MASTER and VITA classical A1–D4 shades with the VITA VM 9 veneering material.

Color classification
The basic colors light/pale and medium are matched with the shade reproduction with VITA VM 9. A classification table for shades in combination with VITA VM 9 can be found on page 39.

Use of the additional colors neutral and intense
The additional color neutral is used to reduce the intensity of the two basic colors light/pale and medium (less chromatic). Intense is used to increase the intensity of the two basic colors (more chromatic).
Both additional colors can also be used in their pure form: neutral, e.g., to reduce the lightness of zirconia and intense to achieve a very high degree of shade intensity. The shade effect of the final restoration can be influenced by individual coloring of the substructure. As a result, the color can be adjusted in a way to differ from the shade sample.

Graphic respresentation of 1:1 mixtures



Use

Make sure that the surface of the restoration is not too smooth in order not to affect the penetration of the Coloring Liquid. To achieve consistent coloring results, any dust or grease must be removed from the substructure before use. Then a cleaning cycle (see page 42) in a dental furnace is required for restorations that are ground when wet to remove coolants or lubricants from the porous structure.

Immersion technique

The restoration is immersed in the coloring liquid according to the shade to be reproduced. Shake well before use. Fill liquid from the bottle into the appropriate container and place the substructure in the liquid in a way to avoid bubbles and to ensure complete coverage with liquid. Use metal-free tweezers to immerse the substructures in the coloring liquid for 2 minutes. When immersing the substructure, vacuum or pressure (2 bars) can be used additionally.
Due to the higher proportion of material, pontics absorb more color pigments and they may appear to have a higher color saturation. In order to prevent excessive color saturation (chroma) at the margins, these can be moistened slightly using a brush and distilled water before they are immersed. This prevents the penetration of too much color into the pontic.
Subsequently remove excess YZ COLORING LIQUID with a paper tissue. Make sure to avoid puddles in gaps. Then the restoration is dried at room temperature for approx. 30 minutes.
Do not sinter in wet condition!
Observe special information for high speed sintering.
In the case of larger, dense structures (diameter larger than 10 mm), it is recommended to extend the predrying time to 60 minutes.

For individual characterization, the VITA YZ T COLORING LIQUIDS can also be applied in a thin, homogeneous layer with a brush onto the areas of the restoration to be colored. The substructure can be colored from within and without at the margins in order to ensure complete penetration of the color.

Important information:

The application brush should only be used for the application of VITA YZ T COLORING LIQUID. Do not use for layering the ceramic: danger of discoloration! Clean the brush only with distillled water. The brush should not contain any metal to avoid reactions.

Do not refill any used liquid into the bottle since it may be contaminated with ceramic dust. The liquid can be stored in the container up to one week; then it must be poured away and new liquid must be used. Used liquids can be thinned with a copious amount of water and disposed through the public sewage system.

Layering technique with VITA VM 9

VITA YZ T White in combination with VITA YZ T COLORING LIQUIDs is perfectly adjusted to veneering with VITA VM 9.
For more information about veneering with VITA VM 9, please also refer to the Working Instructions No. 1190.

Full veneering

Substructure colored with YZ T COLORING LIQUID ready for veneering with VITA VM 9.

To achieve adequate bonding of colored VITA YZ T substructures and VITA VM 9, we recommend carrying out a BASE DENTINE washbake. The BASE DENTINE powder is mixed with MODELLING Fluid RS to obtain a thin aqueous mixture and applied very thinly to the dry and clean substructure while ensuring uniform coverage and fired subsequently.

Now apply the desired shade of BASE DENTINE starting from the neck to obtain the required complete tooth shape.
To obtain sufficient space for the enamel, the volume of the dentine must be reduced correspondingly.

Then apply several small portions of ENAMEL to complete the crown mould beginning from the middle third of the crown. Then firing is carried out according to the firing parameters.

Restoration after firing. Adjust the shape if required.

Finish the bridge. Make sure not to damage the substructure when separating the interdental spaces of veneered VITA YZ restorations.
For glaze firing, the entire surface must be ground evenly and grinding particles must be removed carefully.

If required, the restoration can now be coated with VITA AKZENT Plus GLAZE and then individualization can be carried out using the VITA AKZENT Plus stains. Firing is carried out according to the firing parameters.

Restoration completed using the veneering technique.

Cut-back-technique with VITA VM 9

The cut-back should be stored directly when designing the restoration or integrated manually before sintering. The minimum wall thicknesses need to be observed.

Substructure prepared using cut-back after sintering.
The wash bake was carried out to achieve good bonding for the reduced units.

Building up the shape of the restoration with enamel and translucent materials.

Restoration after firing. Then adjust the restoration and characterize with the VITA AKZENT Plus materials.

Restoration completed using the cut-back technique.

Press-over technique with VITA PM 9

VITA PM 9 is perfectly suitable for pressing over VITA YZ T.

The individual steps to fabricate an overpressed restoration are described below. The detailed procedure is described in the Working Instructions VITA PM 9 No. 1450.

Alternatively, the substructure can be previously colored with VITA YZ T COLOROING LIQUID.
The anatomical wax-up can be started immediately after sintering and subsequent check of fit of the substructure.
Previous liner or wash bake is not required.

Fully anatomical model directly on the substructure. The wax thicknesses need to be observed.
Kronen und Brücken immer an ihrer voluminösesten Stelle. Each bridge unit requires at least one press sprue.
In the case of bridges, the sprue is always attached to the external cusp.
Press object and press sprue should form a single line to allow unobstructed pressing of the ceramic.

Pressed restoration after devesting and sandblasting.

Cut off the pressed object from the press sprue using a sharp diamond disc while exerting only little pressure.

Use only fine-grit and sharp diamond tools for grinding. Exert little pressure and adjust a low speed. Avoid the generation of heat and adhere to minimum layer thicknesses.

Restoration ready for characterization of the shade with the stains and glaze materials of the VITA AKZENT Plus assortment.

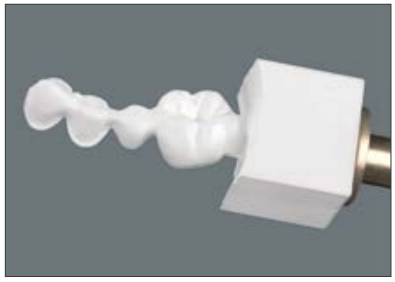
After a stains fixation firing process, the restoration can be completely coated with VITA AKZENT GLAZE SPRAY and fired subsequently.

Overpressed posterior bridge on the model

Rapid Layer Technology

The VITA Rapid Layer Technology enables the fabrication of fully anatomical composite bridges consisting of a CAD/CAM manufactured substructure (VITA YZ) and a veneer structure (e.g. VITABLOCS) using Sirona's inLab 3D software (> V 3.80). After sintering the substructure and polishing the veneer structure, both materials are bonded to one another using composite.
More information on on processing can be found in the Working Instructions No. 1740.

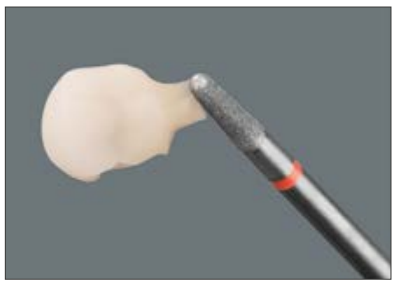
Based on the "Multilayer" design method, the software creates a fully anatomical suggestion calculated using Biogenerics.
This suggestion can be individuallly adjusted depending on the requirements.



Completely milled substructure (VITA YZ T) after the CAM process.

Completely milled veneer structure (VITABLOCS) on the block holder.

When finishing the substructure, make sure to preserve the cervical shoulder; avoid removing too much material and deforming the veneer structure.
Minimum wall thicknesses must be ensured.
After finishing and smoothing, the substructure can be colored with VITA YZ T COLORING LIQUID and sintered subsequently.



Fine-grit diamond tools are used to adjust the veneer structure.
The veneer structure can be carefully fitted on the substructure after sintering. Veneer structure and substructure may only come into contact at the cervical margin. Perfect fit of both elements is required.

Any characterization of the shade (staining technique) of the veneer structure must be carried out before bonding the veneer to the zirconia substructure!
It is recommended to apply a thin coat of glaze material to the base surfaces of the substructure prior to bonding.
A harmonious cervical color transition from the veneer structure towards the substructure can be achieved by placing the veneer structure onto the substructure and then painting the cervical margin of the substructure.
Remove the veneer structure again prior to firing and fire separately (not together with the substructure).

Characterized structures ready for bonding.

Step by step procedure

Conditioning the zirconia substructure
Sandblasting the outer surfaces using Al_2O_3 (max. 50 µm) and a blasting pressure of max. 2.5 bar.

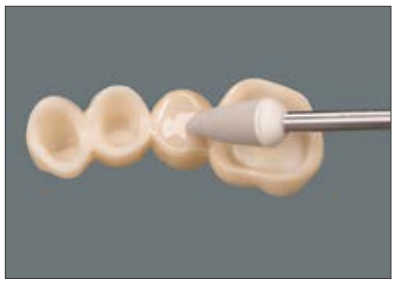
Conditioning the veneer structure
Cleaning:
Clean carefully; if required, degrease with alcohol and dry with oil-free air.

Etching with hydrofluoric acid gel:
Use a disposable brush to apply VITA CERAMICS ETCH (hydrofluoric acid gel, 5%) to the inner surfaces. Etching time: 60 sec.

Removing the hydrofluoric acid gel:
Completely remove the remaining acid by spraying off (60 seconds) or cleaning in an ultrasonic bath. Then dry for 20 seconds. Do not brush off as there is a risk of contamination! After drying, the etched surfaces have a whitish opaque appearance.

Application of composite
Apply a thin coat of composite into the veneer structure using a spatula or a microbrush.
Then place the zirconia substructure into the veneer structure while applying uniform pressure. Use a scaler to remove large excesses. Leave small excesses until the material has completely hardened.

Carefully remove excess composite from the shoulders and the base using fine diamond tools (max. 40 µm) and diamond-coated rubber polishers.
Smooth transitions must be ensured to avoid irritation of the gingiva in situ.



A high-luster polish of the zirconia base surfaces of the bridge units is important since they are not covered by the veneer structure.
This step is not required if a glaze layer has already been fired on before adhesive bonding.

Completed composite bridge.

Temporary bonding of fully anatomical restorations

Monolithic VITA YZ T and VITA YZ HT restorations can be bonded temporarily since they exhibit high inherent strength and there is no risk of damaging the veneer when removing the restoration prior to permanent bonding. Therefore veneered VITA YZ substructures are not suitable for temporary use.

Care should be taken and tension must be avoided when removing the restoration, e.g. use so-called bite pads. Once they are heated, these bite pads provide good adhesion and ensure uniform distribution of the retention force to the restoration when it is removed by the dentist.

Basically, all suitable or approved temporary bonding materials can be used for temporary bonding.
Please observe the corresponding instructions for use.

However, if it is intended to carry out permanent bonding using the adhesive technique, eugenol-free cements must be used, since residues of eugenol-containing materials adversely affect the polymerization of adhesive composites.

Mechanical cleaning (e.g with pumice or sandblasting with corundum) and cleaning with alcohol are required for the inner surfaces of the restoration prior to definitive bonding.

Permanent bonding of VITA YZ T and VITA YZ HT restorations

Material	Type of bonding		
	Conventional	Self-adhesive	Adhesive
VITA YZ T	●	●	●
VITA YZ HT	●	●	●

High-strength oxide ceramics cannot be etched using hydrofluoric acid gel and must be sandblasted with Al_2O_3 (50 µm) at a maximum pressure of 2 bar prior to bonding to increase the retention.
We recommend the use of materials which contain a phosphate monomer, especially for composites. This creates a chemical bond between the oxide ceramic surface that has been sandblasted and the composite. Adhesive bonding is recommended for short stumps (≤ 4 mm).

Note
Please observe the processing instructions of the manufacturer of respective bonding material.

Procedure

Material	VITA YZ – partially yttrium-stabilized zirconia
Indication	Single tooth and multi-unit bridge substructure in the anterior and posterior area and fully anatomical anterior and posterior restorations
Type of bonding	Adhesive, self-adhesive or conventional bonding
Sandblasting	With Al_2O_3 (50 µm) at max. pressure of 2 bar
Conditioning / silanizing	60 sec.
bonding	With appropriate bonding materials

Removal/trepanation of placed zirconia restorations

The use of cylindrical diamond instruments under maximum water cooling and a speed of 120,000 rpm is recommended for removing a fixed zirconia restoration. The restoration can then be trepanated with a coarse-grained spherical or cylindrical diamond under maximum water cooling at a speed of approx. 140,000 rpm. When drilling through the restoration, it is recommended to hold the instrument at an angle of 45°.

VITA YZ HT SHADE LIQUID brush technique

Tooth shade	Shade Liquid	Number of brush strokes*			Modifier Liquid*
		Cervical	Body	Incisal	
A1	A1	4	3	2	Chroma A-D Blue Grey
A2	A2	4	3	2	
A3	A3	4	3	2	
A3.5	A3.5	4	3	2	
B2	B2	4	3	2	
C2	C2	4	3	2	
D2	D2	4	3	2	
1M1	1M1	3	2	1	
1M2	1M2	3	2	1	
2L1.5	2L1.5	3	2	1	
2M2	2M2	3	2	1	
3M2	3M2	4	3	2	
3M3	3M3	4	3	2	
4M2	4M2	3	2	1	

* All statements are applicable for VITA YZ HT^{White}. These are only reference values based on the use of small shade samples. The actual shade result may vary from the shade sample depending on the quantity of liquid used, the brush size and the thickness of the substructure. If more color is used, the intensity of the result wil increase.

VITA YZ T – layering technique

Classification for shade reproduction in combination with VITA VM 9. The classifications given below are only intended to provide reference values!

VITA SYSTEM 3D-MASTER shades	VITA YZ T COLORING LIQUID	VITA YZ HT SHADE LIQUID	VITA YZ T Color	VITA VM 9 BASE DENTINE
0M1	–	–	–	0M1
0M2	–	–	–	0M2
0M3	–	–	–	0M3
1M1	CLL/P	1M1	LL1 / light	1M1
1M2	CLL/P	1M2	LL1 / light	1M2
2L1.5	CLL/P	2L1.5	LL1 / light	2L1.5
2L2.5	CLM	–	LL2 / medium	2L2.5
2M1	CLL/P	–	LL1 / light	2M1
2M2	CLL/P	2M2	LL1 / light	2M2
2M3	CLL/P	–	LL1 / light	2M3
2R1.5	CLL/P	–	LL1 / light	2R1.5
2R2.5	CLM	–	LL2 / medium	2R2.5
3L1.5	CLM	–	LL2 / medium	3L1.5
3L2.5	CLM	–	LL2 / medium	3L2.5
3M1	CLL/P	–	LL2 / medium	3M1
3M2	CLM	3M2	LL2 / medium	3M2
3M3	CLM	3M3	LL2 / medium	3M3
3R1.5	CLM	–	LL2 / medium	3R1.5
3R2.5	CLM	–	LL2 / medium	3R2.5
4L1.5	CLM	–	LL2 / medium	4L1.5
4L2.5	CLM	–	LL3 / intense	4L2.5
4M1	CLL/P	–	LL2 / medium	4M1
4M2	CLM	4M2	LL3 / intense	4M2
4M3	CLM	–	LL3 / intense	4M3
4R1.5	CLM	–	LL2 / medium	4R1.5
4R2.5	CLM	–	LL3 / intense	4R2.5
5M1	CLM	–	LL3 / intense	5M1
5M2	CLM	–	LL3 / intense	5M2
5M3	CLM	–	LL3 / intense	5M3

VITA classical A1–D4 shades	VITA YZ T SHADE LIQUID	VITA YZ HT SHADE LIQUID	VITA YZ T Color	VITA VM 9 BASE DENTINE
A1	CLL/P	A1	LL1 / light	A1
A2	CLM	A2	LL1 / light	A2
A3	CLM	A3	LL2 / medium	A3
A3.5	CLM	A3.5	LL2 / medium	A3.5
A4	CLM	–	LL3 / intense	A4
B1	CLL/P	–	LL1 / light	B1
B2	CLM	B2	LL2 / medium	B2
B3	CLM	–	LL2 / medium	B3
B4	CLM	–	LL3 / intense	B4
C1	CLL/P	–	LL1 / light	C1
C2	CLM	C2	LL2 / medium	C2
C3	CLM	–	LL2 / medium	C3
C4	CLM	–	LL3 / intense	C4
D2	CLM	D2	LL2 / medium	D2
D3	CLM	–	LL2 / medium	D3
D4	CLM	–	LL2 / medium	D4

All program parameters for processing the VITA YZ HT and VITA YZ T materials are prestored in the software of the VITA vPad control units for the VITA ZYRCOMAT 6000 MS sintering furnace.
Please note that these programs or their configuration vary depending on the serial number.
The extended sintering curve is available for the automatic programs VITA YZ HT Speed Pre-Dry SL (SHADE LIQUID) and VITA YZ T Speed Pre-Dry CL (COLORING LIQUID) or VITA YZ HT Universal Pre-Dry SL and VITA YZ T Universal Pre-Dry CL (automatic change from predrying to the sintering process in one program sequence) only VITA vPad comfort control units, serial number 2420155636 or higher or for VITA vPad excellence, serial number 2320152050 or higher. This function is not included in all other VITA vPad versions; therefore the program parameters differ slightly.

For all previous models of VITA sintering furnaces and for furnaces of other manufacturers, the program parameters for processing VITA YZ HT and VITA YZ T can be found in the following tables:

VITA YZ HT

	%	T0 °C	↗ min.	↗ °C/min.	T1 °C	→ min.	↘ °C	%
VITA YZ HT Universal	–	25	83:49	17	1450	120:00	200	100
Pre-Dry VITA YZ HT SHADE LIQUID	50	25	7:21	17	150	30:00	–	50
VITA YZ HT High-speed sintering	Restorations with up to 14 units can be sintered in the high-speed mode in the VITA ZYRCOMAT MS.							

VITA YZ T

	%	T0 °C	↗ min.	↗ °C/min.	T1 °C	→ min.	↘ °C	%
VITA YZ T Universal	–	25	88:32	17	1530	120:00	200	100
Pre-Dry VITA YZ T COLORING LIQUID	50	25	7:21	17	150	30:00	–	50
VITA YZ T High-speed sintering	Restorations with up to 14 units can be sintered in the high-speed mode in the VITA ZYRCOMAT MS.							

Staining technique

Recommendation for surface treatment of fully anatomical VITA YZ T or VITA YZ HT restorations:

- Double glaze layer; previously high-gloss polishing of areas/surfaces which are in occlusion is required

Stains fixation firing*

	Predry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	Vac. min.
VITA AKZENT Plus	500	4.00	3.15	80	760	1.00	–

* Can be used for all material combinations.

VITA AKZENT Plus on VITA YZ HT

	Predry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	Vac. min.
Glaze firing VITA AKZENT Plus GLAZE LT	400	4.00	5.37	80	850	1.00	–
Glaze firing VITA AKZENT Plus GLAZE LT PASTE	400	6.00	5.37	80	850	1.00	–

VITA AKZENT Plus on VITA YZ T

	Predry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	Vac. min.
Glaze firing VITA AKZENT Plus GLAZE	500	4.00	5.37	80	950	1.00	–
Glaze firing VITA AKZENT Plus GLAZE PASTE	500	6.00	5.37	80	950	1.00	–

VITA AKZENT Plus on VITABLOCS (characterization with Rapid Layer Technology)

	Predry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	Vac. min.
Glaze firing VITA AKZENT Plus	500	4.00	5.37	80	950	1.00	–
Glaze firing VITA AKZENT Plus pastes	500	6.00	5.37	80	950	1.00	–

VITA AKZENT Plus on VITA PM 9 (characterization with the press technique)

	Predry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	Vac. min.	↘ °C
Glaze firing VITA AKZENT Plus	500	4.00	5.00	80	900	1.00	–	**600***
Glaze firing VITA AKZENT Plus pastes	500	6.00	5.00	80	900	1.00	–	**600***

Layering and cut-back techniques

VITA VM 9 on VITA YZ T / YZ HT

	Predry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	Vac. min.	↘ °C
Cleaning firing	500	3.00	6.00	33	700	5.00	–	–
Regeneration firing	500	0.00	5.00	100	1000	15.00	–	–
BASE DENTINE Washbake	500	2.00	8.11	55	950	1.00	8.11	–
MARGIN firing	500	6.00	8.21	55	960	1.00	8.21	–
EFFECT LINER firing	500	6.00	7.49	55	930	1.00	7.49	–
First dentine firing	500	6.00	7.27	55	910	1.00	7.27	**600***
Second dentine firing	500	6.00	7.16	55	900	1.00	7.16	**600***
Glaze firing	500	0.00	5.00	80	900	1.00	–	**600***
Glaze firing VITA AKZENT Plus	500	4.00	5.00	80	900	1.00	–	**600***
Glaze firing VITA AKZENT Plus PASTE	500	6.00	5.00	80	900	1.00	–	**600***
Corrective firing with COR	500	4.00	4.20	60	760	1.00	4.20	**500***

* Long-term cooling down to the respective temperature is recommended for the respective last firing cycle of the veneering ceramic; the lift position for VITA VACUMAT furnaces should be > 75%. Firing object must be protected against direct supply of air.

Any information given is only intended as a reference for the user. Should the surface quality or the degree of transparency or glaze not correspond to the result that is achieved under optimum conditions, the firing procedure must be adjusted correspondingly. The crucial factors for the firing procedure are not the firing temperature indicated on the furnace display, but the appearance and the surface quality of the firing object after firing.

Scientific studies and ongoing market observation have formed the basis of VITA Zahnfabrik's recommendation for decades in order to offer customers the best possible solution for dental restorations. New results confirm that great care is required particularly when veneering and processing zirconia substructures. As a result, the following procedure is recommended in order to offer even more safety:
As a result of the poor thermal conductivity of both materials (Y-TZP and veneering ceramic), higher residual stress can occur in this compound system than is known in the case of metal ceramics. This residual thermal stress in the veneering ceramic, in particular in the case of large restorations, can be counteracted by means of slow cooling to below the transformation temperature of the veneering ceramic during the last firing cycle (approx. 600°C for VITA VM 9). Such a firing procedure with expansion cooling is well known as a metal ceramic technique to dental technicians; a step of this nature is necessary to reduce tension in the case of some gold alloys.

More information on the subject of all-ceramic materials:
M. Kern, P. Pospiech, A. Mehl, R. Frankenberger, B. Reiss, K. Wiedhahn, K.H. Kunzelmann: „Vollkeramik auf einen Blick" Leitfaden zur Indikation, Werkstoffauswahl, Vorbereitung und Eingliederung von vollkeramischen Restaurationen; Herausgeber im Eigenverlag: Arbeitsgemeinschaft für Keramik in der Zahnheilkunde e.V., 76255 Ettlingen; ISBN 3-00-017195-9

VITA YZ HT Concept Brochure, No. 10145
VITA YZ T Product Sheet, No. 10187
VITA YZ HT Product Sheet, No. 10155
VITA YZ HT / VITA YZ T Working Instructions, No. 10166
VITA YZ Technical and scientific documentation, No. 10160

VITA VM 9 Product Information, No. 1192
VITA VM 9 Working Instructions, No. 1190

VITA PM 9 Product Information, No. 1678
VITA PM 9 Working Instructions, No. 1450

VITA RLT Working Instructions, No. 1740

VITA AKZENT Plus Product Information, No. 1926
VITA AKZENT Plus Working Instructions, No. 1925

VITA ZYRCOMAT 6000 MS Concept Brochure, No. 1792
VITA ZYRCOMAT 6000 MS Operating Manual, No. 1859

These publications and more information about VITA YZ are available at www.vita-zahnfabrik.com/cadcam

Description of symbols

Product number


Observe instructions for use

Lot number


Date of manufacture


Manufacturer


Expiration date


Temperature limits

Prescription

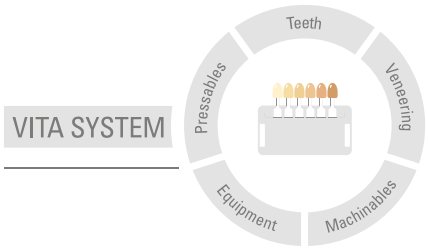

Protect from direct sunlight.

Safety at work and health protection	When working with the product, wear suitable safety goggles/ face protection and light respiratory protection.	

VITA AKZENT Plus BODY SPRAY / GLAZE SPRAY / GLAZE LT SPRAY	**Extremely flammable aerosol.** Spray-on ceramic glaze material. • For dental applications only. • Not for intraoral use. • Shake well before use. • Pressurized container. May burst if heated. Do not puncture or burn. • Protect from direct sunlight and temperatures above 50 C°. • Do not pierce or burn even after use. • Do not spray into flames or onto glowing objects. • Keep away from ignition sources. - No smoking. • Keep away from heat / sparks / open flame / hot surfaces. • sources of ignition.	
VITA YZ HT SHADE LIQUID	**Danger** Contains erbium nitrate hydrate • Causes severe skin burns and damage to eyes. • May irritate the respiratory tract. • Avoid inhalation of fog/vapor/aerosol. • Carefully wash face, hands and exposed skin after the use. • Wear protective gloves/protective clothing/eye and face protection. • In case of contact with the skin (or hair): Remove/take off all contaminated and soaked clothing immediately. Rinse skin with water/shower. • In case of contact with eyes: rinse carefully with water for some minutes. Remove contact lenses if worn and easy to do so. Continue rinsing.	 

For detailed information, please refer to the respective safety data sheet.
The respective safety data sheets can be downloaded at www.vita-zahnfabrik.com or requested by fax at (+49) 7761-562-233.

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: 08.15

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 YZ T · **VITA YZ** HT · **VITA YZ** T COLORING LIQUID · VITA AKZENT® **Plus** · VITA**VM®9** · VITA**PM®9** · **VITABLOCS®**

Zirkonzahn Srl., Gais, has been certified in accordance with the Medical Device Direct and the following product bears the CE mark CE 0476: **VITA YZ** HT SHADE LIQUID

Rx Only

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

10166E - 0815 (X.) S - Version (01)