VITA YZ® SOLUTIONS

Instructions for use



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

VITA – perfect match.

VITA

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Explanation of symbols:

System/technology info
Please note
Note
Note
Process
Tips

1. Material system/processes

Note:

- What? VITA YZ SOLUTIONS includes zirconia blanks in four degrees of translucency with matched system components for reliable shade reproduction.
- What for? VITA YZ blanks can be used for the production of fully/partially veneered reconstructions and monolithic bridge restorations in the anterior and posterior tooth regions.
- With what? VITA YZ blanks come in many different versions:
  T (Translucent), HT (High Translucent), ST (Super Translucent), XT (Extra Translucent), White (uncolored), Color (monochrome, tooth-shaded), Multicolor (polychrome, tooth-shaded)

1.1 Restoration concepts and processing variants

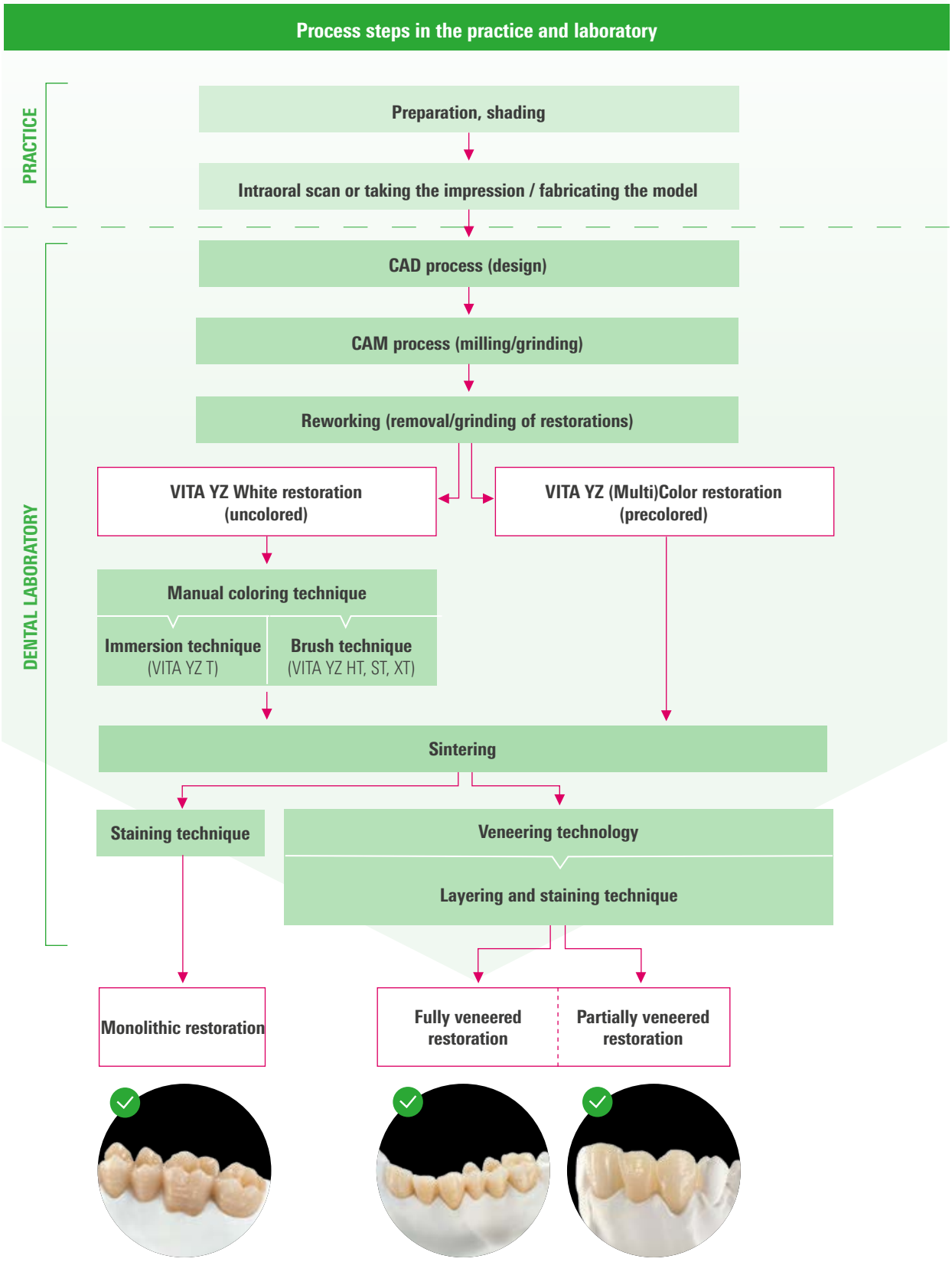
Material type	Manual coloring technique	Monolithic solution	Partially/fully veneered solutions	
		Staining technique	Partial veneering	Full veneering Layering technique
VITA YZ XT	Brush technique	●	●	○
VITA YZ ST	Brush technique	●	●	○
VITA YZ HT	Brush technique	○	○	●
VITA YZ T	Immersion technique	–	○	●

● recommended ○ possible ✕ not possible – not recommended

Note:

- **Available VITA materials for the above processing options:**
  - **Shading technique:** VITA YZ XT SHADE LIQUID, VITA YZ ST SHADE LIQUID, VITA YZ HT SHADE LIQUID and VITA YZ EFFECT LIQUID primarily for brush technique and VITA YZ T COLORING LIQUID for immersion technique (each one to be applied prior to sintering).
  - **Staining technique:** VITA AKZENT Plus STAINS and GLAZE for shade characterization and glazing of VITA YZ restorations.
  - **Full veneering (layering technique):** VITA LUMEX AC for veneering of crowns and bridge substructures.

1.2 Workflow/process options for fabrication variants



2. CAD process/design guidelines

2.1 Design parameters

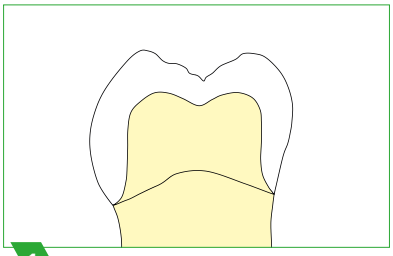
All information refers to sintered restorations		Minimum wall thickness in mm				Connector cross-sections in mm²			
		VITA YZ T	**VITA YZ** HT	**VITA YZ** ST**	**VITA YZ** XT	**VITA YZ** T	**VITA YZ** HT	**VITA YZ** ST	**VITA YZ** XT
Inlay, onlay, veneer	incisal occlusal circumferential	0.5 0.5 0.4	0.5 0.5 0.4	0.6 0.6 0.5	0.8 0.8 0.7	–	–	–	–
Anterior and posterior crowns (fully anatomical or substructure)	incisal occlusal circumferential	0.5 0.5 0.4	0.5 0.5 0.4	0.6 0.6 0.5	0.8 0.8 0.7	–	–	–	–
Fully anatomical anterior bridges and substructures with one pontic*	incisal circumferential	0.5 0.5	0.5 0.5	0.6 0.6	1.0 0.8	7	7	9	9
Fully anatomical posterior bridges and substructures with one pontic*	occlusal circumferential	0.6 0.5	0.6 0.5	0.7 0.6	1.2 1.0	9	9	12	12
Fully anatomical multi-unit anterior bridges and substructures with two pontics	incisal circumferential	0.6 0.5	0.6 0.5	0.8 0.6	–	9	9	12	–
Fully anatomical multi-unit posterior bridges and substructures with two pontics	occlusal circumferential	0.7 0.6	0.7 0.6	0.8 0.6	–	12	12	15	–
Cantilever bridges with one extension	incisal occlusal circumferential	0.7 0.7 0.5	0.7 0.7 0.5	0.8 0.8 0.6	–	12	12	15	–

*) VITA YZ XT is limited to bridges with a maximum of three units.
**) VITA YZ ST is limited in Canada, to bridges with six units.

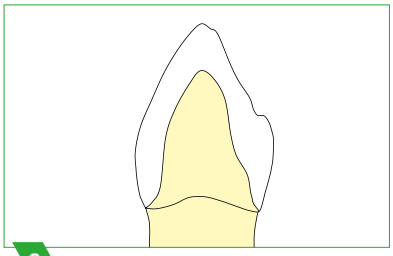
Note:

- The minimum wall thicknesses refer to fully sintered restorations.
- The cantilever bridge unit should be modeled approximately one third narrower in its mesiodistal dimension.

2.2 CAD: design of fully anatomical restorations



1 Posterior crown design



2 Anterior crown design

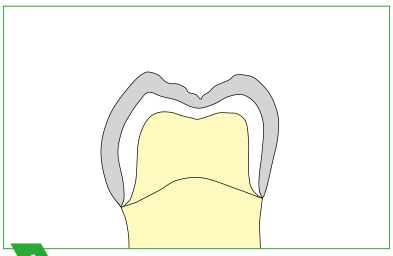
Note:

- The applicable minimum wall thicknesses for the respective material variant must be observed.
- The goal is to obtain a uniform wall thickness.

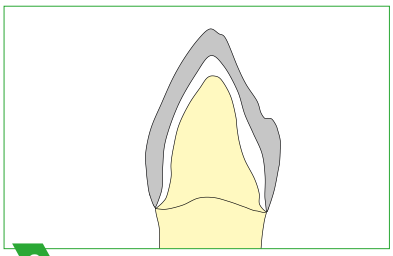
Note:

- You will find information on ceramic-compatible preparation in the brochure "Clinical Aspects," No. 1696.

2.3 CAD: Substructure design for veneered restorations



1 Posterior substructure design



2 Anterior substructure design

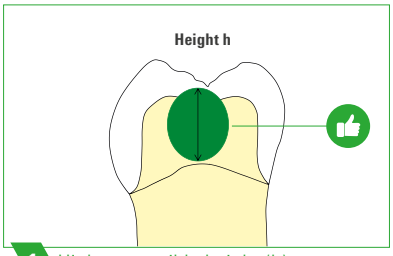
Note:

- Sharp edges on the substructure should generally be avoided.
- Minimum wall thicknesses for substructures must be observed.
- When designing substructures, an anatomically reduced tooth shape must be observed.
- The cusp should be supported according to the anatomical progression.
- 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, is not to exceed 2 mm (the optimum layer thickness ranges from 0.7 to 1.2 mm).

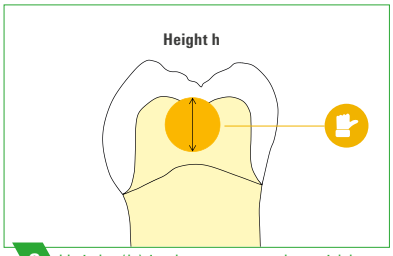
Please note:

- For implant-supported restorations, depending on the fabrication process, sharp edges may exist, which may cause fracture of the respective zirconia superstructures during the period of wearing. These sharp edges must be avoided in general (e.g., can be rounded off with wax before the scan).

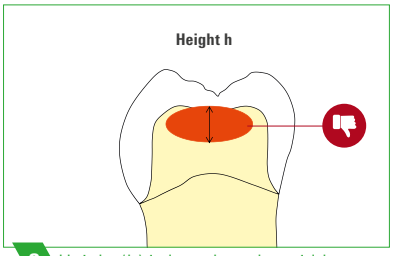
2.4 CAD: design of the connectors



1 Highest possible height (h)



2 Height (h) is the same as the width

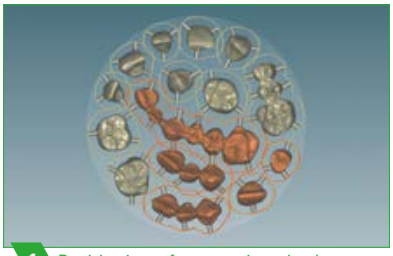


3 Height (h) is less than the width

Note:

- The height of the connector surfaces is the highest possible that can be selected (Fig. 1).
- The height should be at least as high as the width (Figs. 1 and 2).
- Sharp corners and edges are to be avoided.

2.5 CAD: positioning of restorations in the blank



1 Positioning of restorations in the disc (CAM software)



2 The printed side corresponds to the incisal or occlusal side

Note:

- It must be ensured that the milling area limits of the objects overlap, but do not project into other restorations (exception: the restorations have common connectors).

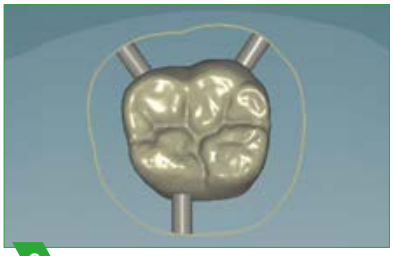
Please note:

- For wide-span bridge constructions, position the dental arch parallel to the edge of the disc.
- The color-printed side of a multicolor disc corresponds to the incisal/occlusal and the opposite side to the cervical (chromatic) side.
- The multicolor discs must be positioned in the CAM unit so that the color printed side is aligned with the incisal/occlusal side of the restoration.
- The normal positioning of the restoration in the multicolor disc (relative to disc heights of 14 mm, 18 mm and 22 mm) is centered. This captures the entire color gradient. For restorations made of multicolor discs to have a clearly visible enamel area, they must be positioned in the CAM software as high as possible in the top of the disc.
- For 25 mm multicolor discs, the incisal edge should be positioned in the upper third of the disc. The lower third, especially for implant restorations, can be used for the gingiva/neck portion.

2.6 CAD: use of connectors



1 Anterior tooth restoration with horizontally aligned connectors



2 Posterior tooth restoration with connectors

Note:

- For multi-unit restorations, the connectors should be attached orally and vestibularly.
- For each single-tooth restoration, ideally three connectors should be attached.

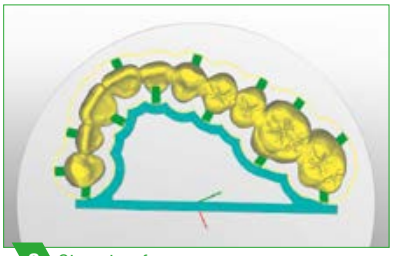
Please note:

- The connectors should not be placed in the interdental area.
- So that no indentations or undercuts occur, the connectors should be placed in the area of the anatomical equator.
- The specifications of the respective software manufacturer must be observed.

2.7 CAD: use of the sintering support



1 Sintering tongue and sintering drops



2 Sintering frame



3 Sintering tongue before skeletonization

Note:

- **Sintering drops, sintering pins**
  - These are occlusal auxiliary overlays on which the restoration can be stored horizontally during the sintering process.
  - These are especially recommended for small, thin-walled and highly arched bridges as a supporting element.
- **Sintering frames (software-dependent)**
  - Frame structure with strut recommended for bridges of seven or more units.
- **Sintering tongue (software-dependent)**
  - However, the sintering tongue should always be skeletonized before sintering. This can be done by filling with other restorations within the sintering tongue.
  - The cross-connection must not be interrupted by a restoration in the case of terminal pontics.

Please note:

- For more than five-unit constructions made of VITA YZ T/HT/ST, a sintering support must already be constructed in the CAM process.
- If the sintering support consists of the remainder of the blank, its volume must be reduced to the extent (e.g., by inserting additional restorations) that uniform heating can be ensured during the sintering process and the restoration and the sintering support do not heat up at different rates.
- In doing so, the maximum thickness of the thickest bridge unit must not be exceeded to avoid the formation of stress during cooling. This may lead to deformation of the restoration.
- Care must be taken to insert as many connectors as possible to maintain sufficient stability during the milling process.
- The specifications of the respective software manufacturer for the design of the sintering support and the connectors must be observed.

3. CAM process/reworking

3.1 CAM fabrication/enlargement factor



1 Enlargement factor as plain text on disc



2 Enlargement factor as barcode on block



3 Molar before and after sintering; sintering shrinkage of about 20 percent

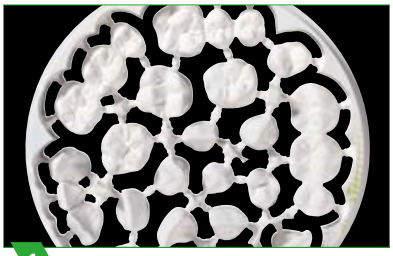
Note:

- VITA YZ ST and XT materials must be milled absolutely dry, as this is the only way to ensure ideal light-optical properties (translucency).
- VITA YZ T and HT materials can be ground or milled both wet and dry.
- VITA Zahnfabrik determines the enlargement factor in all three spatial dimensions (X-, Y-, Z-direction) and integrates the information as plain text or barcode in the print on the blank.
- Depending on the software, the enlargement factor is queried for discs (e.g., 1.2264) or the corresponding X-, Y- (e.g., VGF: X, Y = 22.64) and Z-value (e.g., Z = 22.40). The corresponding value is then entered into the respective CAM software.
- For blocks, the barcode is scanned in the device. If this is not possible, the code can also be entered as plain text (e.g., *Z24809F).

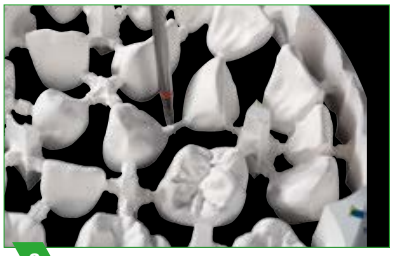
Please note:

- If VITA YZ HT is processed wet, a cleaning firing must be conducted before further processing.

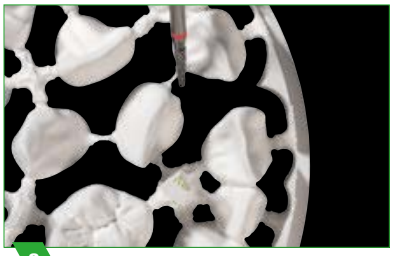
3.2 Reworking of restorations without sintering support



1 Milled restoration with connectors.



2 Detachment by tapering of the connectors.



3 Cut through tapered connector.



4 Grind connector with diamond or carbide burr.



5 Reduce marginal edges.



6 Careful, recontouring the fissures.



7 Slightly smoothing the surface.



8 Prepolishing with a silicone-free rubber polisher.

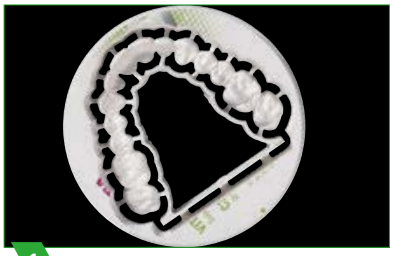
Note:

- After the CAM process, for single crowns and bridge restorations without sintering support, cut all connectors halfway with a diamond or crosscut carbide burr.
- In the next step, completely cut the connectors which attach to the retainers first, and only after that, cut the pontics.

Please note:

- Bridge restorations may not be separated approximally using a diamond separating disc, since this may result in breaking points on the connectors.
- Functional surfaces are completely retained in the zirconia when using the cut-back technique, or else they need to be generously removed and then fully coated.
- The manufacturer's instructions regarding minimum wall thicknesses must be observed.

3.3 Reworking of restorations with sintering support



1 Bridges with skeletonized sinter support following the milling process.



2 Tapering of the connectors on the vestibular side of the restoration.



3 Tapering of all vestibular connectors.



4 Carefully cut through opposing vestibular connectors.



5 Separated and reworked restoration with sintering support.

Note:

- Bridges with eight or more units are not separated from the sintering support prior to sintering to avoid deformation.
- Cut the connectors to be removed to half with an appropriate grinding instrument (tapering).
- Finally, carefully separate all vestibular connectors and the outer arch with a cutting disc.
- Carefully grind the outer connector shoulders.

Please note:

- The reworking of VITA YZ restorations should always be carried out in the unsintered state.
- Only use suitable milling tools (e.g., fine-grain diamonds, fine-toothed carbide burs, zirconia stones), low speed (≤ 20,000 1/min), and little pressure. Avoid overheating the ceramic.
- Make sure that the minimum wall and connector thicknesses are maintained when reworking (see page 5).
- If the restoration is colored with liquids, the entire occlusal surface is easy to grind with a fine diamond, and the fissures are carefully traced to open the surface for liquid absorption.
- Before sintering, remove all milling dust from the restoration with a brush or oil-free compressed air.
- The restorations must not be sandblasted or cleaned with a steam jet before sintering!

Tips:

- In order to facilitate high-gloss polishing of fully anatomical restorations, it is recommended to smooth the milled restoration before hard sintering with a smoothing instrument or to pre-polish the restoration with silicone-free polishers.
- For restorations that are manually colored, only coarse rubber polishers should be used to avoid "densification" of the surface and uneven staining.
- For pre-polishing, we recommend a PU-bonded rubber polisher.

3.4 Conducting the cleaning firing



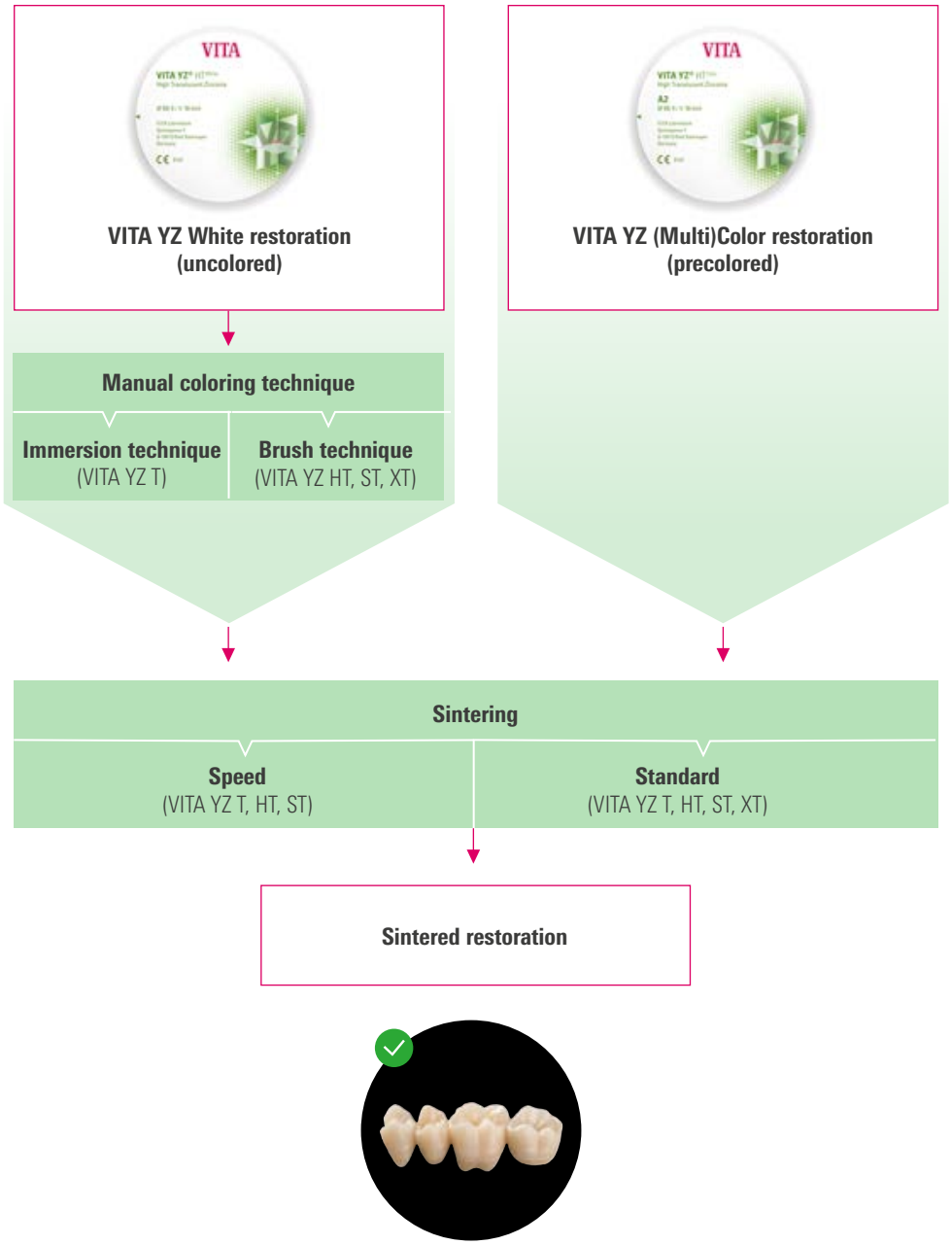
Firing parameters/ program name	%	Pre-dry. °C	→ min.	↗ min.	↗ °C/min.	T °C	→ min.	VAC min.
YZ T cleaning firing	50	500	3:00	6:00	33	700	5:00	–
YZ HT cleaning firing	50	290	10:00	31:00	10	600	5:00	–

Note:

- Before the sintering process, remove any traces of milling residue in order to prevent fit inaccuracies caused by sintered milling dust.
- If restorations made of VITA YZ T or YZ HT are processed wet, a cleaning firing must be conducted prior to further processing in order to avoid unwanted turbidity caused by cooling and lubricating liquid.
- Cleaning firing after wet processing is generally recommended for thick restorations and restorations with sharp edges, in particular for implant-supported bridge structures, so that the moisture introduced by the abrasive does not cause sintering issues.
- Since VITA YZ ST and XT need to be dry milled, there is no cleaning firing.

4. Coloring/sintering

4.1 Workflow (options) for coloring technique/sintering



Note:

- VITA YZ T White variant is colored prior to sintering using the immersion technique.
- VITA YZ HT, ST, XT White variants are colored before sintering using the brush technique.
- VITA YZ (Multi)Color variants are already precolored and can be immediately sintered.

4.2 Manual coloring using immersion technique



1 Prepared substructure.



2 Immerse substructure in the coloring liquid with metal-free pincers ...



3 … and remove after two mins.



4 Then drain the restoration on a paper tissue.



5 Remove excess liquid.



6 Dry the restorations thoroughly before sintering.

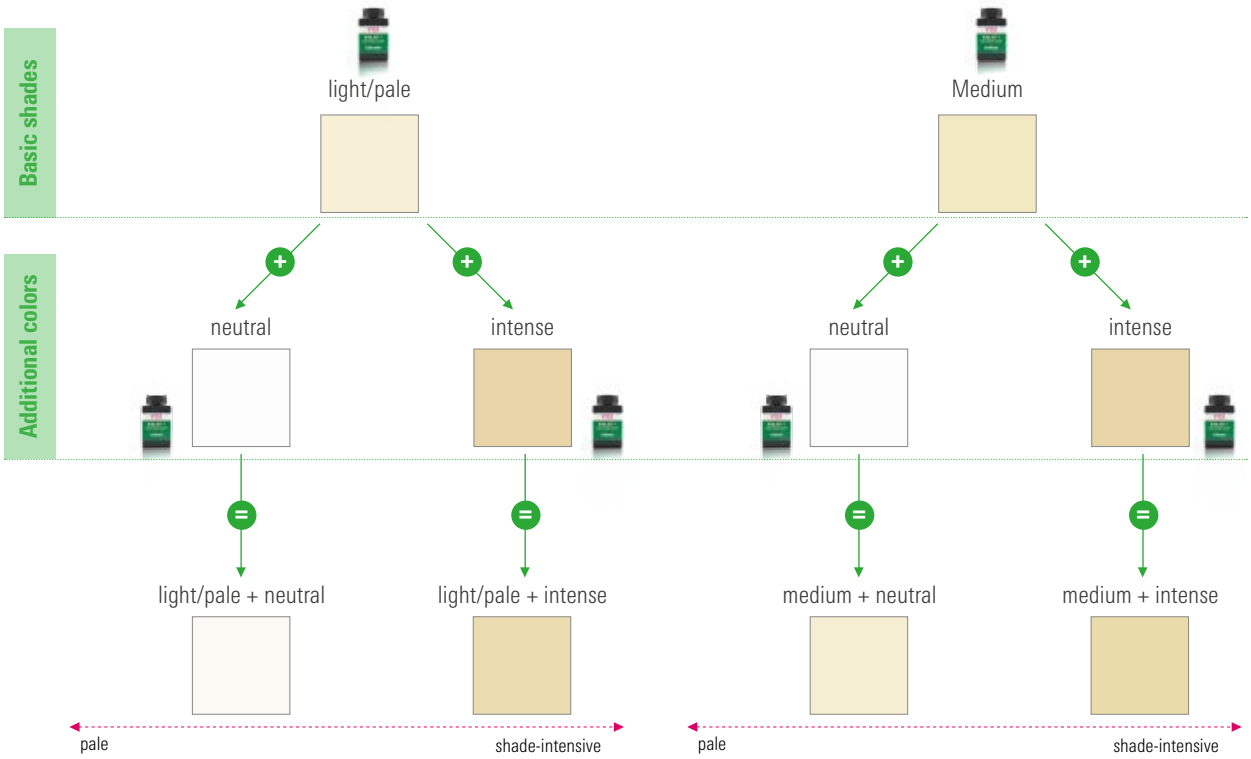


7 Substructure after sintering.

Note:

- The immersion technique is used for substructures made of VITA YZ T White using VITA YZ T COLORING LIQUID coloring liquids.
- The pontics of a reconstruction absorb more color pigments, due to their high volume of material and may have a more intense color.
- In order to counteract an increased color intensity of the pontics, they can be moistened slightly with distilled water using a brush before immersion.
- Information on drying restorations can be found under item 4.5, page 20.

Scheme for coloring with the immersion technique



Note:

- VITA YZ T COLORING LIQUIDS are coloring liquids for coloring substructures made of VITA YZ T prior to the sintering process and are available in four different shades.
- The basic shades light/pale and medium are matched for shade reproduction with VITA classical A1–D4 and VITA SYSTEM 3D-MASTER shades.
- The additional "neutral" shade is suitable for the reduction of intensity (less chromatic) of light/pale and medium.
- The shade "Intense" intensifies (increases chromaticity) of both the basic shades light/pale and medium.
- The additional shades can also be used alone for individualization.
- All COLORING LIQUIDS can be mixed with one another as desired.

Please note:

- Wet ground restorations should be freed of cooling and lubricating fluids before coloring with a cleaning firing (see page 39); otherwise, the porous structure will not be able to absorb any liquid.
- A substructure shade different from the basic shades (light/pale, medium) can influence the shade effect of the final result.
- In doing so, the shades can be controlled differently from the shade guide individually.

4.3 Manual coloring using brush technique



1 Milled restorations immediately after the CAM process.



2 Dried and reworked restoration.



3 Begin with the shade application* on cervical area of all units.



4 Infiltrate the body* after that.



5 Then infiltrate the incisal area*.



6 Apply the coloring liquid to the occlusal surface.



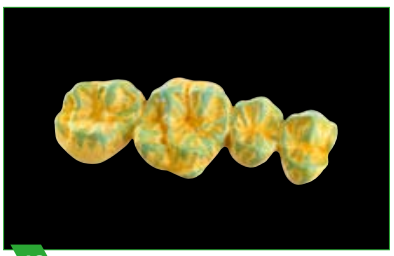
7 Highlight with orange and brown fissures.



8 Intensify the basal surfaces with orange and infiltrate the inner side of the pillars ca. 1 mm deep.



9 With the Grey/Blue Liquids, incisal effects can be modeled.



10 Finished, colored workpiece before sintering.



11 Restoration on firing tray, ready for pre-drying.



12 Bridge after sintering.

Note:

- Shake the bottles of coloring liquid well before each use!
- Dip a metal-free brush (e.g., YZ BRUSH) briefly into the appropriate liquid and then wipe off on the edge of the bottle or dab with a paper tissue.
- For each brushstroke, always proceed exactly the same way and paint according to the given pattern (see scheme for coloring with brush technique).
- In order to prevent the liquid from being thinned out and to avoid contamination, always wash and dry the brush completely after use and whenever a different color is used.
- Seal the bottle again tightly after using the fluid.

*) For the shade reproduction using the brush technique, there are corresponding shade reproduction tables in the Chapter "Shade reproduction/firing."

Please note:

- For uniform coloring results, the restorations must be free of dust and oil.
- The restoration must not be moistened before coloring, as most areas will take up less of the coloring liquid. This can lead to an uneven shade result.
- The surface of the restoration should have a residual roughness. It should not be too smooth, as this can hinder the penetration of the liquid.
- When using coolants and lubricants during the CAM process, a cleaning cycle should be conducted before coloring to remove them.

Example scheme for coloring using brush technique



Note:

- For coloring restorations made of VITA YZ HT, VITA YZ ST or VITA YZ XT, use the respective VITA YZ HT, VITA YZ ST or VITA YZ XT SHADE LIQUIDS that are matched to the translucency level.

4.4 Notes on the use of coloring liquids



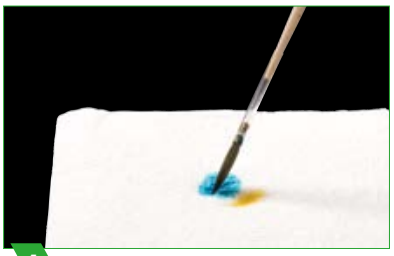
1 Use only metal-free brushes.



2 Alternatively, Pentel brand brushes can also be used.



3 Always wash brushes out after use and when changing shades.



4 Brushes that are not carefully cleaned may contaminate other liquid colors.



5 Add the indicator liquid drop by drop.



6 Addition of the stabilizer.

Note:

- Keep the brush and the liquids away from metal (e.g., modeling instruments, devices, etc.) to prevent contamination.
- When using the additional colors, be sure to thoroughly clean the brush to avoid contamination with other colors.
- For EFFECT LIQUIDS, use of a separate brush is recommended.
- For brush infiltration, it is recommended to wear protective gloves.
  This prevents the formation of an oil film on the restoration, which can impair the infiltration of the coloring liquid.
- The indicator shade pigments, which were added to the product to make the dentin color easier to identify, may evaporate after some time (e.g., if stored in too bright a light).
- These shade pigments can be added again using VITA YZ EFFECT LIQUID (1 cm of liquid each in the bottle corresponds to approx. one to two drops of VITA YZ EFFECT LIQUID Indicator).

Please note:

- Constructions must not be sintered in a moist state.
- Follow the appropriate instructions on high-speed sintering!
- Do not refill any used liquid into the bottle as it may be contaminated with ceramic dust.
- Store the liquid in the working container for a maximum of one week, then dilute it and dispose of it through the sewer system, and use new liquid.
- For reconstructions made of VITA YZ HT, ST and XT, coloring with the brush technique using the respective VITA YZ SHADE LIQUIDS is recommended. Immersion technique can also be used with these coloring liquids.

4.5 Drying the restorations



1 Infrared lamp with 250 Watt power.



2 Drying the restorations under the infrared lamp.



3 Pre-Dry program.

Drying with an infrared lamp (250 Watt)	
Time required for each type of restoration	**Temperature ~ 70 °C**
Single tooth restorations	≥20 min.
Restorations with two to four units	≥45 min.
Restorations with five or more units	≥60 min.

Drying with the Pre-Dry program								
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**→ min.**	**↘ °C**	**%**
Pre-Dry	50	25	7.21	17	150	30:00	–	50

Note:

- Before drying, the restoration must be free of dust and milling residue.
- Before the sintering process, restorations must be sufficiently dry; otherwise, this could lead to damage of the sintering furnace or the restoration.
- For drying, either an infrared lamp (250 Watt power) or the Pre-Dry program of the VITA ZYRCOMAT 6000 MS/6100 MS can be used.
- The drying time is dependent on the temperature and size of the restoration.

Please note:

- If VITA YZ restorations have been infiltrated with liquids prior to the sintering process or wet grinding of VITA YZ T/HT reconstructions, subsequent drying is absolutely necessary.
- In the case of large, massive restorations, a prolongation of the pre-drying time is recommended.
- A pre-drying temperature above 100 C directly on the object is not recommended, since this may lead to defects in the restoration. As a result, pre-drying should be carried out with the firing chamber open (50%) so that the direct temperature on the object does not exceed 70-80 C.

4.6 Preparation for sintering process



1 Sintering dish MS.



2 Use of appropriate sintering pearls.



3 Fill the sintering dish MS with sintering pearls (a pearl bed of at least three layers).



4 Use a second sintering dish MS with sintering stack supports for stacking or covering.



5 Sintering dish MS filled with restorations.



6 Stack sintering of color/multicolor restorations.



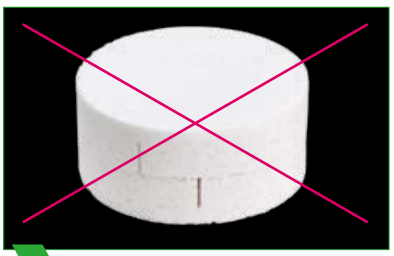
7 Stacks of sintering dishes MS for manually colored restorations.



8 Optional: Covering of manually colored restorations.



9 Simultaneous sintering of pre-colored color/multicolor and manually colored restorations.



10 Do not lay one sintering dish directly on top of the other.

Note:

- Place the sintering pearls in three layers in the sintering dish MS or directly in the sintering platform.
- To sinter several restorations at the same time (stack sintering), place a second sintering dish on top of the first sintering dish using sintering stack supports. Use a maximum of two sintering dishes. To do this, distribute the sintering dish supports evenly on the sintering dish or sintering platform and place the sintering dish MS on top.
- The sintering dish MS must only be stacked when using the appropriate universal programs! Stacking during speed sintering is not possible.

Recommendation for positioning of restorations in a sintering dish

	Recommended	Possible	Not possible
› Anterior crowns	 Place anterior crowns on the labial surface.	 Place anterior restorations on the oral surface.	 NEVER place restorations on the crown edges.
› Posterior crowns	 Place restorations on the occlusal surface.		 NEVER place restorations on the crown edges.
› Anterior bridges	 Place restoration on the incisal edges and always support the bridge units, pressing in slightly, if necessary.	 Labial positioning of the bridges is possible.	 NEVER place restorations on the crown edges.
› Posterior bridges	 Press restorations with occlusal surfaces slightly into the pearl bed.	 Place restorations on the labial or oral surface.	 Do not support restorations on the crown edges.
Restorations › with sintering support	 Place bridges vertically, directly on the firing base.	 Place bridges horizontally on the sintering support.	 Do not place restorations in the sintering dish with a sintering support.

Please note:

- Always support crown and bridge constructions sufficiently over the entire surface with the bed of sintering beads.
- As an alternative to the use of sintering pearls, bridge constructions can be supported with sintering drops.
- The restorations must not touch each other.
- Larger workpieces or several units can be placed directly on the sintering platform, filled with sintering pearls or with the sintering support directly on the base.
- The sintering pearls must not be jammed into the connector area of the bridges.

4.7 Sintering programs of the VITA ZYRCOMAT 6000 MS/6100 MS



Note:

- **Universal program**
  - This is a conventional sintering program for all non-colored VITA YZ restorations.
- **Universal Pre-Dry Program**
  - This is a conventional sintering program for all manually colored VITA YZ restorations with an integrated pre-drying phase for drying liquids.
- **YZ ST Speed Program**
  - This is a very fast sintering program for restorations made of VITA YZ ST. Speed sintering of bridges with a maximum of four units is permitted. The restorations may not be manually colored with liquids. Speed sintering in less than 60 minutes for VITA YZ ST.
- YZ T/HT Speed Program
  - This is for sintering in 80 minutes (for VITA YZ T and HT only).
- **Speed Pre-Dry Program**
  - This is a rapid sintering program for all manually precolored VITA YZ T and HT restorations, including a pre-drying phase.
- **Pre-Dry Program**
  - This is a drying program for manually colored VITA YZ restorations for drying liquids.
- **YZ One for all**
  - This is a sintering program for the simultaneous sintering of various VITA YZ materials.

Please note:

- VITA YZ T and VITA YZ ST are sintered at 1530 °C, and VITA YZ HT and VITA YZ XT are sintered at 1450 °C.
- In the case of large and thick bridges, the cooling phase should be completed in three to four hours to 200 C in order to avoid any stress cracks that may occur. This must be programmed in the furnace.
- Single tooth crowns and small, thin anterior bridges can be cooled in a shorter time.
- Only VITA YZ T and VITA YZ HT are approved for speed sintering for bridges with up to 14 units.
  VITA YZ ST is limited to speed sintering on bridges with up to four units.
  VITA YZ XT, on the other hand, is not approved for speed sintering.
- Only the sintering dish MS with sintering pearls is to be used in speed mode.
- Detailed information on the firing programs can be found in Chapter 7, "Shade reproduction/firing."

Note:

- You can find information on operating the VITA ZYRCOMAT 6000 MS/6100 MS in Instruction Manual No. 1859.

4.8 Speed sintering after manual coloring



1 Manually precolored restorations in the sintering dish MS, ready for speed sintering



2 Alternatively, the restorations can also be covered.



3 Stacking the sintering dishes in speed mode is not possible.

Note:

- When speed sintering manually colored reconstructions (see VITA YZ SHADE LIQUIDs), these can be covered with an MS sintering dish as a lid.

Please note:

- VITA YZ XT cannot be sintered in speed mode!
- The supports for sintering dishes may only be used for supporting the MS sintering dish as a cover.
- Stacking several dishes (double-stacked sintering) is not possible in speed mode.

4.9 Sintering in OEM devices

Note:

- VITA YZ materials can be sintered in all high-temperature sintering devices, which can be operated with the sintering parameters indicated.
- The respective manufacturer's specifications must be observed.
- VITA does not grant a warranty or accept any liability for damage resulting from processing VITA YZ materials in furnaces from other manufacturers.
- VITA YZ HT and VITA YZ ST can be sintered in the CEREC SpeedFire (Sirona Dental Systems GmbH). With a drying program integrated in the CEREC SpeedFire, restorations infiltrated with VITA YZ HT SHADE LIQUIDS can also be processed. Please read the instructions for the CEREC SpeedFire.

4.10 Reworking after the sintering process



1 Processing with turbines under water cooling.



2 Carefully separate the bridge construction.

Note:

- After the sintering process and a cooling phase suitable for the substructure, remove the restorations and carefully fit to the die.
- For a bridge construction with sintering support, remove it very slowly and carefully after it has completely cooled down. ideally with a turbine and water cooling.

Please note:

- The separation and finishing after hard sintering, must take place under sufficient water cooling.
- Since the surface quality of ceramic materials is decisive for its flexural strength, reworking of the sintered restoration should generally be avoided or kept to a minimum.
- Unavoidable reworking must be done with fine-grain diamonds with red color coding (fine: 27 – 76 µm) or less (yellow, extra-fine: 10 – 36 µm or white, ultra-fine: 4 – 14 µm) using wet-grind turbines with water cooling and with low grinding pressure.
- It is also possible to process the substructure using soft, diamond-coated rubber polishers and a handpiece with slow speeds and low pressure.
- Minimum wall thicknesses must be ensured when reworking the restoration.
- When finishing frameworks, make sure that no sharp edges are created.
- Subsequent processing of sintered VITA YZ restorations with abrasive instruments must be avoided, particularly in the area of bridge connectors.

Tip:

- Work exclusively with PU-bonded (polyurethane) polishers. Residues of these polishers can be easily removed and burned out without leaving any residue.
- When using silicone-bonded polishers, there is a danger that the abraded silicone cannot be removed without residue. This may negatively affect the bonding area towards the veneering ceramic or glazing material.

4.11 Regeneration firing after reworking

Note:

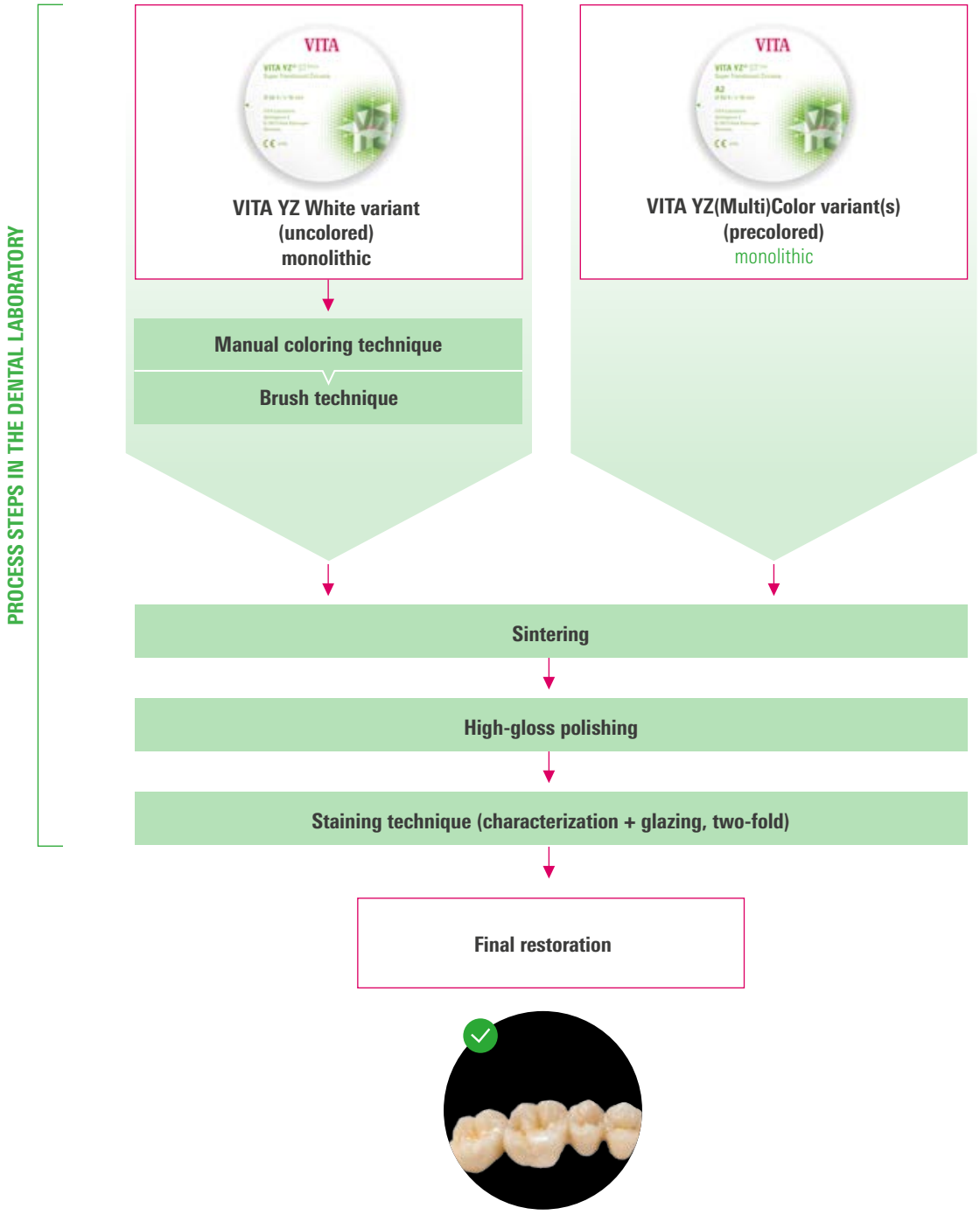
- When veneering VITA YZ after mechanical surface treatment (grinding), regeneration firing for 15 minutes at 1000 °C is recommended in order to reduce any surface tensions that may have occurred. As a result, any phase transformations that have taken place on the surface can be reversed.

Please note:

- Microcracks caused by processing cannot be undone.

5. Monolithic restoration

5.1 Workflow (options) for monolithic restoration



Note:

- Workflow for monolithic restorations made from precolored VITA YZ Color or VITA YZ Multicolor materials and for manually colored VITA YZ White variants using the brush technique.

5.2 High-gloss polishing prior to characterization/glazing



1 **VITA CERAMICS** Polishing Set technical (extraoral)



2 **VITA CERAMICS** Polishing Set clinical (intraoral)

Note:

- Prepolishing of ground areas is done with the diamond-coated, dark grey rubber polishers of the VITA CERAMICS Polishing Set technical/clinical at a speed of 7,000 to 10,000 rpm.
- High-gloss polishing is then carried out with the diamond-coated, light grey rubber polishers at a speed of 7,000 to 10,000 rpm.

Please note:

- The polishing of the occlusal surface, especially of the areas that are in direct contact with the antagonist, is particularly important in monolithic restorations.
- After functional grinding, repolish the surfaces of the ground occlusal surface very carefully.
- In general, if the surface is polished to a high gloss, it is significantly less or not abrasive, according to laboratory tests.
  As a result, the high-gloss polish protects the antagonist from unwanted abrasion.

5.3 Finalization using characterization/glazing



1 Sintered restoration.



2 High-gloss polishing of the areas in direct contact with the antagonist.



3 For better surface wettability, a separate application of GLAZE LT Spray is recommended.



4 To avoid fitting problems, free the inside of the crown from glaze materials.



5 Restoration after the first glaze firing.



6 Characterization with VITA AKZENT Plus EFFECT STAINS in the second application of glaze.



7 Final restoration from the buccal view.



8 Final restoration from the oral view.

Note:

- Using the staining technique, reconstructions made of VITA YZ can be individually characterized after sintering by painting and glazing.
- Before painting VITA YZ ST and XT restorations, the fabrication of plastic stumps is recommended in order to simulate the natural stump shade.
- For shade reproduction, you will find in Chapter 7, "Shade reproduction/firing," corresponding shade reproduction tables for the selection of blanks, as well as brush, immersion, layering and staining technique.

Please note:

- For monolithic VITA YZ restorations manually colored with VITA YZ SHADE LIQUID, the glaze firing should not be performed at a temperature over 850 °C. The use of VITA AKZENT Plus GLAZE LT/FLUOGLAZE LT is recommended here.
- For monolithic VITA YZ restorations, a high-gloss polishing of the surfaces in occlusion is absolutely necessary. After that, a two-fold application of glaze is done.

Note:

- Information on bonding of VITA YZ restorations in the patient's mouth can be found at www.vita-zahnfabrik.com/adiva

5.4 Recommendations on characterization and glazing



1 Characterization with VITA AKZENT Plus EFFECT STAINS in the second application of glaze.



2 Finished glazed work from the occlusal view.



3 Glazed work from the buccal view.

Note:

- **Characterization with stains**
  - The restoration must be free of dirt and oils before the stain and characterization firing.
  - Intensive shading is achieved with repeated painting and firing and not with a thicker application of color.
  - For the additional imitation of the incisal edge and the translucency in the incisal and occlusal region, the VITA AKZENT Plus EFFECT STAINS (e.g., ES10, ES11, ES12, ES13) can be used.
  - For the individual characterization of the cusps and fissures, the VITA AKZENT Plus EFFECT STAINS ES05–ES07 can be used.
  - To intensify the shade in the body of the tooth, the VITA AKZENT Plus CHROMA STAINS and BODY STAINS are available.

- **Glaze firing with glazing materials**
  - The glaze firing can be done with either powder, pastes or spray materials.
  - VITA AKZENT Plus FLUOGLAZE LT Spray is available for increasing fluorescence.
  - Approximal contacts that are too weak or missing can be filled with VITA AKZENT Plus FINISHING AGENT.
  - Glaze material on the inner surface of the restoration must be removed with a brush BEFORE firing.

Please note:

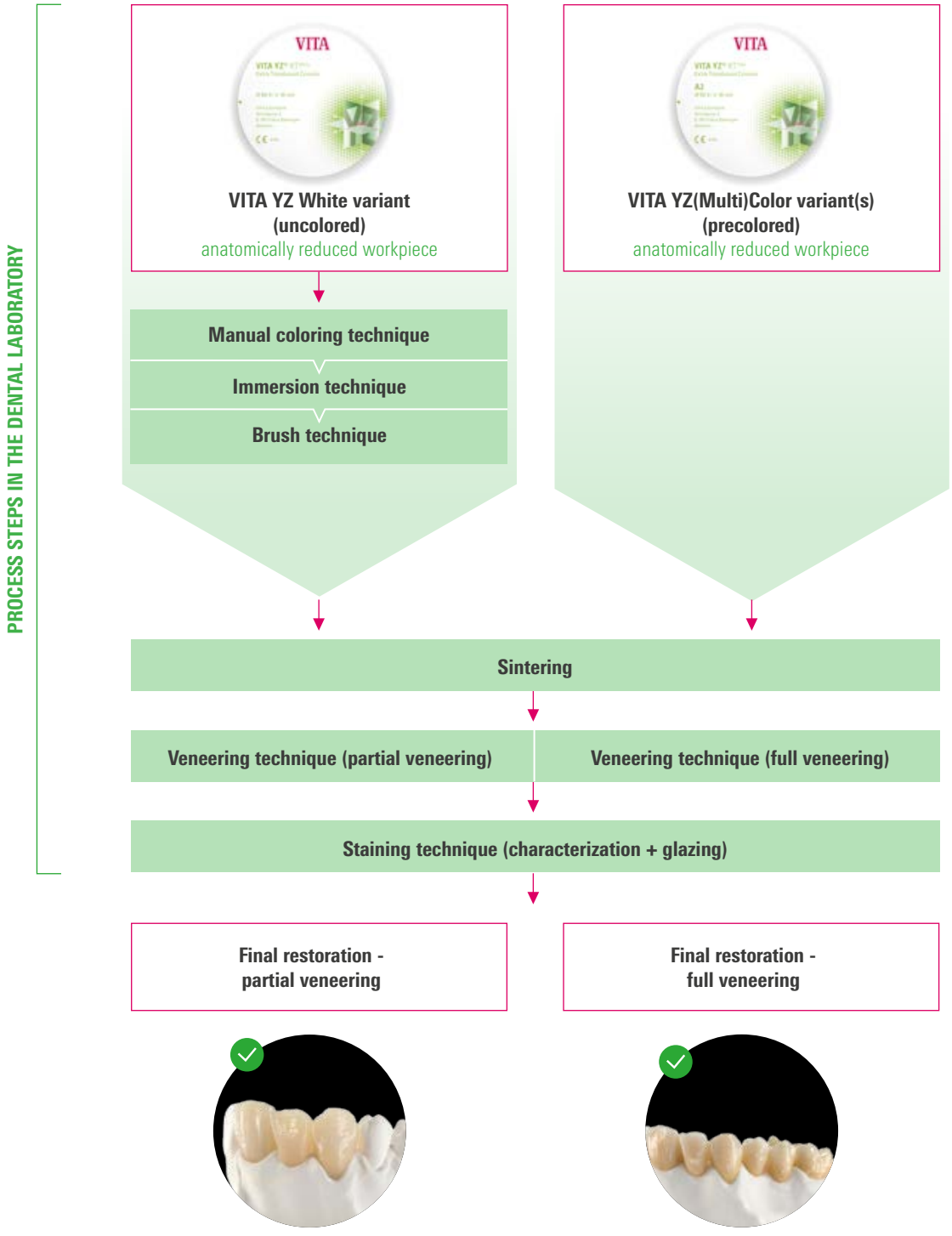
- You can find the appropriate stain and glazing firings in Chapter 7, "Shade reproduction/firing."

Note:

- You can find detailed information on characterization and glazing in the VITA AKZENT Plus Instructions for Use, No. 1925.

6. Partially/fully veneered restoration

6.1 Workflow (options) for veneered restorations



Note:

- Workflow for partially veneered monolithic restorations (after cut-back) made from pre-colored VITA YZ Color or VITA YZ Multicolor materials and for manually colored VITA YZ White variants using brush technique
- Workflow for fully veneered substructures made of pre-colored VITA YZ Color materials, as well as for manually colored VITA YZ White variants using immersion or brush technique.

6.2 Cut-back and partial veneering



1 Anatomically reduced restoration (cut-back) after the CAM process.



2 Restoration made of industrially pre-colored VITA YZ XT Color after sintering.



3 Application of the wash material.



4 Result after washbake.



5 Filling out the shape with enamel and translucency materials



6 Restoration ready for the first dentin firing.



7 Restoration after firing. Apply VITA AKZENT Plus stains and glazes afterwards.



8 Completed restoration.

Note:

- For partial veneering, incisal and translucency materials are applied in the incisal and occlusal areas to an anatomically reduced VITA YZ restoration (cut-back = targeted reduction of the vestibular surface for a small amount of veneering), and then the firing is carried out.
- The cut-back must already be done in the CAD design or manually worked out after the grinding/milling process.
- An unevenly applied reduction improves the natural play of light in the restoration.

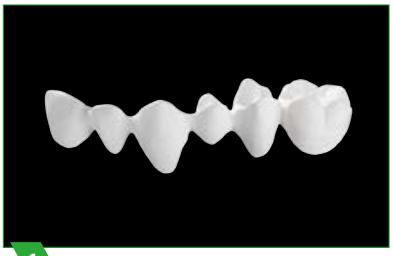
Please note:

- When doing the cut-back, observe the manufacturer's instructions on minimum wall thicknesses.
- For a good bond between veneer and substructure material, a washbake should be performed before the partial veneering.
- Make sure not to damage the substructure when separating the interdental spaces of veneered VITA YZ restorations.
- Before the glaze firing, the entire surface must be ground evenly, and grinding particles must be removed carefully.

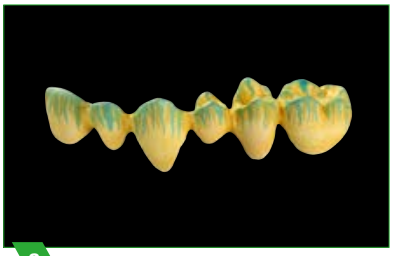
Note:

- For detailed information on veneering with VITA LUMEX AC, please see the Instructions for Use, No. 10605.
- Information on bonding of VITA YZ restorations in the patient's mouth can be found at www.vita-zahnfabrik.com/adiva

6.3 Full veneering using layering technique



1 Prepared substructure, e.g., for full veneering in the esthetic zone.



2 Manually colored VITA YZ ST substructure using brush technique.



3 Substructure after the sintering firing.



4 Uniformly thin wash application.



5 Result after washbake.



6 DENTINE applied, with suggested mamelons.



7 Add interdental spaces after the first dentin firing.



8 Application of DENTINE for shape correction.



9 Apply ENAMEL materials.



10 Separate interdental spaces.



11 Coating ready for second dentin firing.



12 Workpiece prepared for the second firing (palatal view).



13 Finished workpiece after the second firing.



14 Restoration after characterization.

Note:
- Veneering is done with VITA VM LUMEX AC veneering ceramic.
- VITA YZ White variants must be colored before veneering with the respective VITA YZ T COLORING LIQUIDS (immersion technique) or VITA YZ HT, ST, XT SHADE LIQUIDS (immersion and brush technique).
- When separating the interdental spaces of veneered VITA YZ restorations, take care that the substructure is not damaged in the process.
- Use VITA LUMEX AC FLUO INTENSE to achieve greater fluorescence.

Please note:
- The material variants VITA YZ T, HT and ST are recommended for full veneering.
- With VITA YZ T reconstructions, colored tooth stumps and metallic abutment structures are well masked.

Note:
- For detailed information on veneering, please see the VITA LUMEX AC Instructions for Use, No. 10605.
- Information on bonding of VITA YZ restorations in the patient's mouth can be found at www.vita-zahnfabrik.com/adiva

6.4 Finalization of fully veneered reconstruction



1 Finalized workpiece ready for characterization and glazing.



2 Painting and glazing with VITA AKZENT Plus.



3 Finished painted and glazed workpiece on the model.

Note:
- Prior to the application of glaze materials and stains, the restoration that is veneered with VITA LUMEX AC needs to be milled to obtain the final shape and milled completely.
- Before the glaze firing, thoroughly clean the restoration of milling dust.
- After this, the restoration can be characterized with VITA AKZENT Plus glazing materials and stains.

Note:
- You can find detailed information on characterization and glazing in the VITA AKZENT Plus Instructions for Use, No. 1925.
- Information on bonding of VITA YZ restorations in the patient's mouth can be found at www.vita-zahnfabrik.com/adiva

7. Shade reproduction/firing

7.1 Shade reproduction using brush technique

Classification of liquids		
Substructure materials	**Liquid**	**Additional colors**
VITA YZ HT	VITA YZ HT SHADE LIQUID	VITA YZ EFFECT LIQUID Chroma A, Chroma B, Chroma C, Chroma D, Brown, Orange, Blue, Grey, Light Pink, Pink, Dark Pink
VITA YZ ST	VITA YZ ST SHADE LIQUID	
VITA YZ XT	VITA YZ XT SHADE LIQUID	

Tooth shade	**VITA YZ HT/ST/XT SHADE LIQUID**	**Number of brush strokes** (all brush strokes in a circular motion)			**EFFECT LIQUID**
		Neck 1 x inside each	Body	Incisal	
A1	A1	4 x outside	3 x outside	2 x outside	Fissures, interdental and cervical area: Chroma A–D Brown Orange Deep effect in the incisal and occlusal areas: Blue, Grey Gingival area: Light Pink, Pink, Dark Pink
A2	A2				
A3	A3				
A3,5	A3,5				
A4	A4				
B1	B1				
B2	B2				
B3	B3				
B4	B4				
C1	C1				
C2	C2				
C3	C3				
C4	C4				
D2	D2				
D3	D3				
D4	D4				
VITA SYSTEM 3D-MASTER					
1M1	1M1	3 x outside	2 x outside	1 x outside	
1M2	1M2				
2L1.5	2L1.5				
2M2	2M2				
3M2	3M2	4 x outside	3 x outside	2 x outside	
3M3	3M3				
4M2	4M2	3 x outside	2 x outside	1 x outside	

Note:

- All information applies to VITA YZ White. These are reference values that may vary depending on brush pressure, handling and the amount of liquid.
- You can find additional information in the Instructions for Use for VITA YZ SHADE LIQUID (920-01585M).

7.2 Shade reproduction using staining technique (monolithic restorations)

Manually colored VITA YZ HT, VITA YZ ST and VITA YZ XT restorations – VITA classical A1–D4				
Tooth shade	**VITA YZ HT/ST/XT White with SHADE LIQUID**	**CHROMA STAINS (optional)**	**BODY STAINS (optional)**	**EFFECT STAINS**
A1	A1	CSA	BS01– BS05	Individual application: ES0–ES07 Incisal: ES10, ES11, ES12, ES13 Gingival area: ES08, ES09
A2	A2			
A3	A3			
A3,5	A3,5			
A4	A4			
B1	B1	CSB		
B2	B2			
B3	B3			
B4	B4			
C1	C1	CSC		
C2	C2			
C3	C3			
C4	C4			
D2	D2	CSD		
D3	D3			
D4	D4			

Precolored VITA YZ HT, VITA YZ ST and VITA YZ XT restorations – VITA classical A1–D4				
Tooth shade	**VITA YZ HT/ST/XT Color or VITA YZ ST/XT Multicolor**	**CHROMA STAINS (optional)**	**BODY STAINS (optional)**	**EFFECT STAINS**
A1	A1	CSA	BS01– BS05	Individual application: ES01–ES07 Incisal: ES10, ES11, ES12, ES13 Gingival area: ES08, ES09
A2	A2			
A3	A3			
A3,5	A3,5			
A4	A4			
B1	B1	CSB		
B2	B2			
B3	B3			
B4	B4			
C1	C1	CSC		
C2	C2			
C3	C3			
C4	C4			
D2	D2	CSD		
D3	D3			
D4	D4			

*) Availability of the individual variants may vary.

Manually colored VITA YZ HT restorations – VITA SYSTEM 3D-MASTER				
Tooth shade	**VITA YZ HT White with SHADE LIQUID**	**CHROMA STAINS mixture 1:1**	**BODY STAINS (optional)**	**EFFECT STAINS**
1M1	1M1	–	BS01–BS05	Individual application: ES01–ES07 Incisal: ES10, ES11, ES12, ES13 Gingival area: ES08, ES09
1M2	1M2	–		
2L1.5	2L1.5	–		
2L2.5	2L1.5	CSL		
2M2	2M2	–		
2M3	2M2	CSM3		
2R2.5	2M2	CSM3 + CSR		
3L2.5	3M2	CSM3 + CSL		
3M2	3M2	–		
3M3	3M3	–		
3R2.5	3M3	CSM3 + CSR		
4L2.5	4M2	(CSM3 + 1/5 CSIO) + CSL		
4M2	4M2	–		
4M3	4M2	CSM3		
4R2.5	4M2	(CSM3 + 1/5 CSIO) + CSL		

Precolored VITA YZ HT restorations – VITA SYSTEM 3D-MASTER				
Tooth shade	**VITA YZ HT Color**	**CHROMA STAINS (mixture 1:1)**	**BODY STAINS (optional)**	**EFFECT STAINS**
1M2	1M2	–	BS01– BS05	Individual application: ES01–ES07 Incisal: ES10, ES11, ES12, ES13 Gingival area: ES08, ES09
2L2.5	2M2	CSM3 + CSL		
2M2	2M2	–		
2M3	2M2	CSM3		
2R2.5	2M2	CSM2 + CSR		
3L2.5	3M2	CSM3 + CSL		
3M2	3M2	–		
3M3	3M2	CSM3		
3R2.5	3M2	CSM3 + CSR		

Please note:

- The shade classifications serve only as reference values!

7.3. Shade reproduction via layering technique using VITA LUMEX AC

VITA VM 9 in VITA classical A1–D4					
Tooth shade	**VITA YZ T COLORING LIQUID**	**VITA YZ HT SHADE LIQUID**	**VITA YZ T/HT Color**	**OPAQUE DENTINE, DENTINE**	**ENAMEL**
A1	light/pale	A1	LL1/light/A1	A1	light
A2	medium	A2	LL1/light/A2	A2	light
A3	medium	A3	LL2/medium/A3	A3	light
A3.5	medium	A3.5	LL2/medium/–	A3.5	medium
A4	medium	A4	LL3/intense/–	A4	medium
B1	light/pale	B1	LL1/light/–	B1	medium
B2	medium	B2	LL2/medium/–	B2	medium
B3	medium	B3	LL2/medium/–	B3	medium
B4	medium	B4	LL3/intense/–	B4	medium
C1	light/pale	C1	LL1/light/–	C1	medium
C2	medium	C2	LL2/medium/–	C2	medium
C3	medium	C3	LL2/medium/–	C3	light
C4	medium	C4	LL3/intense/–	C4	light
D2	medium	D2	LL2/medium/–	D2	medium
D3	medium	D3	LL2/medium/–	D3	medium
D4	medium	D4	LL2/medium/–	D4	medium

Please note:

- The shade classifications serve only as reference values!

VITA LUMEX AC in VITA SYSTEM 3D-MASTER					
Tooth shade	**VITA YZ T COLORING LIQUID**	**VITA YZ HT SHADE LIQUID**	**VITA YZ T/HT Color**	**OPAQUE DENTINE, DENTINE**	**ENAMEL**
0M1	–	–	–	0M1	light
0M2	–	–	–	0M2	light
0M3	–	–	–	0M3	light
1M1	light/pale	1M1	LL1/light/–	1M1	light
1M2	light/pale	1M2	LL1/light/1M2	1M2	light
2L1.5	light/pale	2L1.5	LL1/light/–	2L1.5	light
2L2.5	medium	–	LL2/medium/–	2L2.5	light
2M1	light/pale	–	LL1/light/–	2M1	light
2M2	light/pale	2M2	LL1/light/2M2	2M2	light
2M3	light/pale	–	LL1/light/–	2M3	light
2R1.5	light/pale	–	LL1/light/–	2R1.5	light
2R2.5	medium	–	LL2/medium/–	2R2.5	light
3L1.5	medium	–	LL2/medium/–	3L1.5	medium
3L2.5	medium	–	LL2/medium/–	3L2.5	medium
3M1	light/pale	–	LL2/medium/–	3M1	light
3M2	medium	3M2	LL2/medium/3M2	3M2	light
3M3	medium	3M3	LL2/medium/–	3M3	light
3R1.5	medium	–	LL2/medium/–	3R1.5	light
3R2.5	medium	–	LL2/medium/–	3R2.5	medium
4L1.5	medium	–	LL2/medium/–	4L1.5	light
4L2.5	medium	–	LL3/intense/–	4L2.5	light
4M1	light/pale	–	LL2/medium/–	4M1	light
4M2	medium	4M2	LL3/intense/–	4M2	intense
4M3	medium	–	LL3/intense/–	4M3	intense
4R1.5	medium	–	LL2/medium/–	4R1.5	light
4R2.5	medium	–	LL3/intense/–	4R2.5	intense
5M1	medium	–	LL3/intense/–	5M1	light
5M2	medium	–	LL3/intense/–	5M2	intense
5M3	medium	–	LL3/intense/–	5M3	intense

Please note:

- The shade classifications serve only as reference values!

7.4 Cleaning firing

Parameters for cleaning firing							
Programs	**Pre-dry. °C**	**→ min.**	**↗ min.**	**↗ °C/min.**	**T °C**	**→ min.**	**Vac. min.**
YZ T cleaning firing	500	3:00	6:00	33	700	5:00	–
YZ HT cleaning firing	290	10:00	31:00	10	600	5:00	–

Note:

- In order to avoid undesired turbidity, due to wet processing in restorations made of VITA YZ T/HT, a suitable cleaning firing must be carried out before further processing.

Please note:

- Restorations made of VITA YZ ST and VITA YZ XT may only be dry milled.
- The turbidity due to wet processing cannot be removed by a cleaning firing in VITA YZ ST and VITA YZ XT, and has an influence on the translucency and on the final esthetic result.

7.5 Sintering parameters

Pre-Dry parameters when using COLORING LIQUID/SHADE LIQUID								
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**→ min.**	**↘ °C**	**%**
Pre-dry	50	25	7:21	17	150	30:00	–	50

Sintering parameters for VITA YZ T								
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**→ min.**	**↘ °C**	**%**
YZ T Universal	100	25	88:32	17	1530	120:00	200	100
YZ T Speed	Restorations of up to 14 units can be sintered in the VITA ZYRCOMAT 6000 MS/6100 MS in speed mode in 80 minutes.							

Sintering parameters for VITA YZ HT								
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**→ min.**	**↘ °C**	**%**
YZ HT Universal	100	25	83:49	17	1450	120:00	200	100
YZ HT Speed	Restorations of up to 14 units can be sintered in the VITA ZYRCOMAT 6000 MS/6100 MS in speed mode in 80 minutes.							

Sintering parameters for VITA YZ ST								
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**→ min.**	**↘ °C**	**%**
YZ ST Universal	100	25	188:08	8	1530	120:00	200	100
YZ ST Speed	Restorations of up to four units can be sintered in the VITA ZYRCOMAT 6000 MS/6100 MS in speed mode in less than 60 minutes.							

Sintering parameters for VITA YZ XT								
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**→ min.**	**↘ °C**	**%**
YZ XT Universal	100	25	356:15	4	1450	120:00	200	100

Sintering parameters for VITA YZ T, HT, ST, XT											
Programs	**%**	**T0 °C**	**↗ min.**	**↗ °C/min.**	**T1 °C**	**↗ min.**	**↗ °C/min.**	**T2 °C**	**→ min.**	**↘ °C**	**%**
YZ One for all	100	25	51:28	17	900	137:30	4	1450	120:00	200	100

Note:

- All program parameters for the processing of the materials VITA YZ T, VITA YZ HT, VITA YZ ST and VITA YZ XT are already preinstalled in the software of the operating element VITA vPad for the sintering furnace VITA ZYRCOMAT 6000 MS/6100 MS.
- For optimal shade reproduction, we recommend the material-specific Universal Sintering Program of the respective material.
- For the simultaneous sintering of different materials, the sintering program "YZ One for all" is available.
- In the sintering program "YZ One for all," minimal shade deviations are possible due to the sintering parameters not being optimally adjusted to each material.

Please note:

- **Sintering in the CEREC SpeedFire**
  - VITA YZ ST and VITA YZ HT are approved for sintering in the CEREC SpeedFire.
  - VITA YZ HT restorations colored with VITA YZ HT SHADE LIQUID can also be pre-dried and then sintered with the CEREC SpeedFire.
  - Only the VITA AKZENT Plus powder stains, VITA AKZENT Plus GLAZE LT Powder and VITA AKZENT Plus GLAZE LT Spray are approved for glazing.
  - Please observe the instructions for use of the CEREC SpeedFire (Sirona Dental Systems GmbH).

7.6 Stain firing

Stains fixation firing with VITA AKZENT Plus STAINS								
Programs	**Pre-dry. °C**	**→ min.**	**↗ min.**	**↗ °C/min.**	**T °C**	**→ min.**	**Vac. min.**	**↘ °C**
Stains fixation firing	500	4:00	3:15	80	760	1:00	–	–

Glaze firing with VITA AKZENT Plus GLAZE LT/FLUOGLAZE LT								
Programs	**Pre-dry. °C**	**→ min.**	**↗ min.**	**↗ °C/min.**	**T °C**	**→ min.**	**Vac. min.**	**↘ °C**
GLAZE LT Powder/Spray	400	4:00	5:36	80	850	1:00	–	–
FLUOGLAZE LT Spray	400	4:00	5:36	80	850	1:00	–	–
GLAZE LT Paste	400	6:00	5:36	80	850	1:00	–	–

Note:

- For monolithic VITA YZ White restorations colored manually with SHADE LIQUIDs, glaze firing must not be carried out above 850 °C.
- For this purpose, the use of VITA AKZENT Plus GLAZE LT and FLUOGLAZE LT is recommended.
- The stains fixation firing can be carried out with every material combination.

7.7 Firing processes for veneering with VITA LUMEX AC

Firing parameters for veneering with VITA LUMEX AC								
Programs	**Pre-dry. °C**	**→ min.**	**↗ °C/min.**	**approx. temp °C**	**→ min.**	**↘ °C**	**→ min.**	**Vac.**
Regeneration firing	500	00:00	100	1000	15:00	–	–	–
YZ T HT cleaning firing	500	3:00	33	700	05:00	–	–	–
Zirconia washbake	400	04:00	50	800	01:00	–	–	on
Shoulder firing with MARGIN	400	06:00	50	770	01:00	–	–	on
First dentine firing	400	06:00	50	760	01:00	500*	–	on
Second dentine firing	400	06:00	50	755	01:00	500*	–	on
Glaze firing	400	00:00	80	750	01:00	500*	–	–
Stains fixation firing with VITA AKZENT PLUS	400	04:00	80	700	01:00	500*	–	–
Glaze firing with VITA AKZENT PLUS GLAZE LT Powder	400	04:00	50	750	01:00	500*	–	–
Glaze firing with VITA AKZENT PLUS GLAZE LT Paste	400	08:00	50	750	01:00	500*	–	–
Glaze firing with VITA AKZENT PLUS FLUOGLAZE LT Spray	400	06:00	50	750	01:00	500*	–	–
Corrective firing with CORRECTIVE	400	04:00	50	725	01:00	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 6000 M furnaces should be > 75%. The fired items must be protected from drafts after opening the furnace.

Please note:

- All information is to be used as reference values only.
- If the surface, transparency or degree of gloss does not correspond to the firing result that is achieved under optimum conditions, the firing procedure must be adjusted accordingly.
- 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.

Note:

- Based on the poor thermal conductivity of both materials (Y-TZP and veneering ceramic), higher residual stress can occur in this compound system than is known to typically occur in metal ceramics. This residual thermal stress in the veneering ceramic can be counteracted by means of slow cooling in the final firing process, to below the transformation temperature of the veneering ceramic during the last firing cycle (approx. 550° C for VITA LUMEX AC).

8. Technical data/information

8.1 Technical / physical data

Property	Unit	VITA YZ T	VITA YZ HT	VITA YZ ST**	VITA YZ XT
Coefficient of thermal expansion (20 - 500 °C)	10^{-6} K^{-1}	approx. 10.5	approx. 10.5	approx. 10.3	approx. 10.0
Chemical solubility (ISO 6872)	µg/cm²	< 20	< 20	< 20	< 20
Density after sinter firing	g/cm³	approx. 6.05	approx. 6.08	approx. 6.05	approx. 6.03
3-point flexural strength (ISO 6872)	MPa	approx. 1,200	approx. 1,200	> 850	> 600
Sintering temperature	°C	1530	1450	1530	1450
Type/class*	–	II / 5	II / 5	II / 5	II / 4a

* Type II Class 4a > 500 MPa according to DIN EN ISO 6872:2015 Minimum requirements for up to three-unit bridges
Type II Class 5 > 800 MPa according to DIN EN ISO 6872:2015 Minimum requirements for bridges with four or more units
** VITA YZ ST is limited in Canada to bridge indications with a maximum of six units, with a maximum of two adjoining bridge pontics

8.2 Chemical composition

Material / Component	VITA YZ T	VITA YZ HT	VITA YZ ST	VITA YZ XT
–	3Y-TZP	3Y-TZP	4Y-TZP	5Y-TZP
ZrO_2	90 – 95	90 – 95	88 – 93	86 – 91
Y_2O_3	4 – 6	4 – 6	6 – 8	8 – 10
HfO_2	1 – 3	1 – 3	1 – 3	1 – 3
Al_2O_3	0 – 1	0 – 1	0 – 1	0 – 1
Pigments	0 – 1	0 – 1	0 – 1	0 – 1

Note:

- The technical/physical values given are typical measurement results and refer to in-house manufactured samples and measuring instruments in the company.
- If samples are prepared using different methods and measurement equipment, other measuring results may be obtained.

Note:

- Additional technical/physical data can be found in the Technical and Scientific Documentation for VITA YZ SOLUTIONS, No. 10160.

8.3 Intended purpose

- VITA YZ SOLUTIONS products are ceramic materials for dental treatments.

8.4 Patient target group

- No restrictions

8.5 Intended users

- Dental professionals only: dentist and dental technician

8.6 Indication overview

Note:

- VITA YZ Discs and Blocks are milling blanks for the fabrication of dental restorations.
- Depending on the indication, they are suitable for the fabrication of substructures or fully anatomical restorations.

VITA YZ T is approved for:

- fully anatomical crowns and bridges* with up to 14 units in the anterior and posterior tooth regions,
- fully and partially veneered single teeth and bridge substructures* of up to 14 units in the anterior and posterior tooth regions,
- single tooth restorations and bridges* with up to 14 units on directly screwed implant abutments in the anterior and posterior tooth regions,
- Primary telescopes,
- inlays***, onlays***, veneers***, partial crowns***, occlusal veneers (Table Top)***.

VITA YZ HT is approved for:

- fully-anatomical crowns and up to 14-unit bridges* in the anterior and posterior tooth regions,
- fully and partially veneered single-tooth and up to 14-unit bridge substructures* in the anterior and posterior tooth regions,
- single tooth restorations and up to 14-unit bridges* on directly screwed implant abutments in the anterior and posterior tooth regions,
- primary telescopes,
- inlays***, onlays***, veneers***, partial crowns***, occlusal veneers (Table Top)***.

VITA YZ ST is approved for:

- fully-anatomical crowns and up to 14-unit** bridges* in the anterior and posterior tooth regions,
- fully and partially veneered single-tooth and up to 14-unit bridge** substructures in the anterior and posterior tooth regions,
- single tooth restorations and up to 14-unit** bridges* on directly screwed implant abutments in the anterior and posterior tooth regions,
- inlays***, onlays***, veneers***, partial crowns***, occlusal veneers (Table Top)***.

VITA YZ XT is approved for:

- fully anatomical single tooth crowns and up to 3-unit bridges,
- fully and partially veneered single-tooth crowns and up to 3-unit bridge superstructures in the anterior and posterior tooth region,
- inlays***, onlays***, veneers***, partial crowns***, occlusal veneers (Table Top)***.

*) Bridges and bridge superstructures with a maximum of two adjoining bridge pontics.
**) VITA YZ ST is limited in Canada to bridge indications with a maximum of six units with a maximum of two adjoining bridge pontics.
***) For adhesive bonding only.

8.7 Contraindication

Contraindication
for VITA YZ T, VITA YZ HT, VITA YZ ST and VITA YZ XT
○ in cases of more than two contiguous bridge units ○ in cases of two or more cantilever bridge units ○ in cases of parafunctions for veneered restorations, especially for "crunchers" and "pressers" ○ in cases of insufficient oral hygiene ○ in cases of insufficient preparation results ○ in cases of insufficient hard tooth substance ○ in cases of patients who have allergies or sensitivities to the contents ○ provisional integration of veneered restorations ○ conventional or self-adhesive insertion of inlays, onlays, veneers, partial crowns and occlusal veneers (Table Top)
also with VITA YZ XT
○ in cases of bridge restorations with more than three units ○ in cases of cantilever bridges ○ provisional integration

Please note:

- With the following limitations, successfully working with VITA YZ is not guaranteed:
  - exceeding the necessary minimum wall and connector thicknesses,
  - processing of discs and blocks in non-compatible CAD/CAM systems,
  - sintering in a non-compatible sintering furnace,
  - veneering with veneering ceramics that are not suitable for the veneering of zirconia substructures, with a CTE of 10.0 - 10.5 · 10^{-6}/K.
- In the event of non-compliance with the Instructions for Use of the products in use, the product characteristics cannot be ensured, so that product failure and irreversible damage to the natural hard tooth substance, pulp and/or oral soft tissues may result.

8.8 Product safety

- Information on reporting serious incidents in connection with medical devices, general risks associated with dental treatments, residual risks and (if applicable) short clinical safety and performance reports (SSCPs) can be found at htpps://www.vita-zahnfabrik.com/product_safety.

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

8.9 General notes on handling

Note:

- VITA YZ discs and blocks are delivered in a pre-sintered state. In this state, the material can be processed very well, but does not yet have the properties it has after sintering.
- Careful handling in this state is necessary for this reason.
- Please check the packaging and the material immediately upon receipt to ensure that they are intact and in good condition.
- The packaging must be sealed, the product must not show any ruptures, cracks or color irregularities.
- The manufacturer's name, VITA Zahnfabrik, and the CE marking must be present on the packaging.

Please note:

- Store the VITA YZ discs and blocks in the original packaging and in a dry place. Take care when handling these, that the VITA YZ materials are not exposed to any blows or vibrations.
- Take care that the materials are not allowed to be touched with wet hands. Only use liquids that are approved for the products.
- The materials must not be contaminated with foreign substances (e.g., during the CAM process).
- Please read through the instructions for use carefully before you take the zirconia disc or blocks out of the packaging. They contain important information on processing that is useful for your safety and the safety of your patients.
- If not all of the instructions in this leaflet are followed, the VITA YZ discs and blocks must not be used to make dentures.

8.10 Safety at work/health protection

Safety at work and health protection	• While work is in progress, wear suitable safety goggles/face protection. • Only perform work under an extraction unit. • Wear protective gloves.	 

8.11 Storage/disposal

- Store in original packaging at room temperature. Store in a dry location. Protect from direct sunlight.
- The products labelled with a pictogram for hazardous substances are to be disposed of as hazardous waste. Recyclable waste (such as attachments, paper and plastics) must be disposed of using appropriate recycling systems. If necessary, contaminated product residues should be pretreated in accordance with regional regulations and disposed of separately.

8.12 Safety data sheets

VITA AKZENT Plus BODY Spray **VITA AKZENT Plus GLAZE** Spray **VITA AKZENT Plus GLAZE LT** Spray **VITA AKZENT Plus FLUOGLAZE 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.	
VITA YZ HT SHADE LIQUID **VITA YZ ST SHADE LIQUID** **VITA YZ XT SHADE LIQUID** **VITA YZ EFFECT LIQUID**	**Danger** • Causes severe skin burns and eye damage • May cause respiratory irritation. • Do not breathe dust/fume/gas/mist/vapors/spray. • Carefully wash hands, lower arms and face after use. • Use only in the open air or in well-ventilated spaces. • Wear protective gloves/protective clothing/eye and face protection. • Wash contaminated clothing before wearing again. • Dispose of contents/container in accordance with local/regional/national/international regulations.	 

Note:

- You can find detailed information on the corresponding data safety sheet.
- The corresponding safety data sheets can be obtained at https://www.vita-zahnfabrik.com/downloadcenter or by fax at (+49) 7761-562-233.

8.13 Symbol explanations

Medical device		Manufacturer	
For dental users only	Rx only	Date of manufacture	
Observe instructions for use		Expiration date	
Store in a dry location		Product number	
Lot number (batch)			

8.14 Overview of variants, geometries and shades

VITA YZ® SOLUTIONS

	VITA YZ® T For fully veneered reconstructions	**VITA YZ®** HT For fully veneered reconstructions	**VITA YZ®** ST For posterior tooth restorations	**VITA YZ®** XT For anterior tooth restorations
Translucency	• Translucent (T)	• High Translucent (HT)	• Super Translucent (ST)	• Extra Translucent (XT)
Geometry	**Disc:** • h 12, 14, 16, 18, 20, 25 mm **Block:** • 20/19, 40/19, 55, 65/25	**Disc:** • h 12, 14, 16, 18, 20, 25 mm **Block:** • 20/19, 40/19, 55/19, 65/25	**Disc:** • h 14, 18, 20, 22 (exclusively for Multicolor), 25 mm	**Disc:** • h 14, 18, 20, 22 (exclusively for Multicolor), 25 mm

Shades/Chromaticities	• **VITA YZ** T White
	• **VITA YZ** T Color in three lightness levels (LL1–LL3)
		• **VITA YZ** HT White
		• **VITA YZ** HT Color
		  • in 3 VITA classical A1–D4 shades: A1, A2, A3
		  • in 3 VITA SYSTEM 3D-MASTER shades: 1M1, 2M2, 3M2
			• **VITA YZ** ST White
			• **VITA YZ** ST Color
			  • in 16 VITA classical A1–D4 shades
			  • in 3 VITA SYSTEM 3D-MASTER shades: 1M1, 2M1, 3M1
			• **VITA YZ** ST Multicolor
			  • in 16 VITA classical A1–D4 shades
			  • in 5 VITA SYSTEM 3D-MASTER shades: 0M1, 1M1, 2M1, 3M1, 4M1
				• **VITA YZ** XT White
				• **VITA YZ** XT Color
				  • in 16 VITA classical A1–D4 shades
				• **VITA YZ** XT Multicolor
				  • in 7 VITA classical A1–D4 shades: A1, A2, A3, A3.5, B2, C2, D2

Liquids	**VITA YZ** T COLORING LIQUIDs • light/pale, medium, intense, neutral	**VITA YZ** HT SHADE LIQUIDs • in 16 VITA classical A1–D4 shades • in 7 VITA SYSTEM 3D-MASTER shades: 1M1, 1M2, 2L1.5, 2M2, 3M2, 3M3, 4M2	**VITA YZ** ST SHADE LIQUIDs • in 16 VITA classical A1–D4 shades	**VITA YZ** XT SHADE LIQUIDs • in 16 VITA classical A1–D4 shades
		• **VITA YZ** EFFECT LIQUIDS in 11 shades		

Note: The available range of geometries may differ with individual White, Color and Multicolor variants.

8.15 System compatibility



1 inLab MC XL
(Sirona Dental Systems GmbH)



2 CORiTEC 250i
(imes-icore GmbH)

Note:

- **VITA YZ** SOLUTIONS – **SYSTEM SOLUTIONS:**
  VITA offers VITA YZ blanks with a specific holder system for the CAD/CAM system:
  - inLab MC XL family and CEREC MC XL family (Sirona Dental Systems GmbH)

- **VITA YZ** SOLUTIONS – **UNIVERSAL SOLUTIONS:**
  VITA offers VITA YZ blanks in a universal disc geometry (Ø 98.4 mm)
  for CAD/CAM systems:
  - CORiTEC Series (imes-icore GmbH),
  - DMG ULTRASONIC Series (DMG Mori AG),
  - Röders RXD Series (Röders GmbH),
  - N4/R5/S1/S2/Z4/R5 (vhf camfacture AG),
  - inLab MC X5 (Sirona Dental Systems GmbH),
  - Ceramill micro 4X/Ceramill micro 5X/Ceramill Motion 2 (Amann Girrbach AG),
  - KaVo Everest (KaVo Dental GmbH).

Please note:

- For optimal esthetic results (translucency), restorations made out of VITA YZ ST and VITA YZ XT must not be wet ground.
- VITA YZ ST and VITA YZ XT must be milled dry.
- The range of variants/geometries/shades of VITA YZ may vary for individual CAD/CAM system partners or systems.
- VITA YZ processing must be performed with a validated CAD/CAM system.

Note:

- You can find additional information on VITA CAD/CAM system partners at:
  www.vita-zahnfabrik.com/Systempartner.

8.16 VITA system solutions

Shade determination



- For digital shade determination, use **VITA Easyshade V** and for visual shade determination, the **VITA Linearguide 3D-MASTER** or **VITA classical A1–D4**, for example.

CAD/CAM fabrication



- Various geometries, translucency and chroma levels of **VITA YZ** blanks are available for CAD/CAM fabrication.

Coloring*



- For manual coloring of the milling results, use the **VITA YZ** COLORING LIQUID (T) or the respective **VITA YZ** SHADE LIQUIDS (HT/ST/XT).

Sintering



- Sinter the restoration made of **VITA YZ** with the **VITA ZYRCOMAT 6100 MS** sintering furnace.

Veneering**



- For particularly esthetic results, use the VITA veneering ceramic **VITA LUMEX AC**, which is adapted to zirconia.

Characterization Glaze



- Use the VITA AKZENT **Plus** stains/glazing materials for the characterization of **VITA YZ**.

Firing



- Fire the restoration made from **VITA YZ** with the **VITA VACUMAT 6000 M** firing furnace**.**

Polishing



- Use the recommended polishing sets for **VITA YZ**.

Bonding



- Secure the zirconia restoration with full adhesive or self-adhesive using **VITA ADIVA** LUTING SOLUTIONS.

*) Optional: Coloring with VITA YZ COLORING LIQUIDs or VITA YZ SHADE LIQUIDs is an optional process step. This is not necessary with precolored VITA YZ blanks.
**) Optional: Veneering with VITA LUMEX AC is an optional process step and is not necessary for the monolithic restoration concept.

WE ARE HERE TO HELP

More information on products and processing is also available at **www.vita-zahnfabrik.com**

Hotline Sales Support

Our Internal Sales Department team will be glad to assist you when taking orders or if you have questions about the delivery, product data and marketing materials.

Phone +49 (0) 7761 / 56 28 84
Fax +49 (0) 7761 / 56 22 99
8 a.m. to 5 p.m. CET
Email info@vita-zahnfabrik.com

Technical Hotline

Please feel free to contact us if you have any technical questions concerning VITA product solutions.

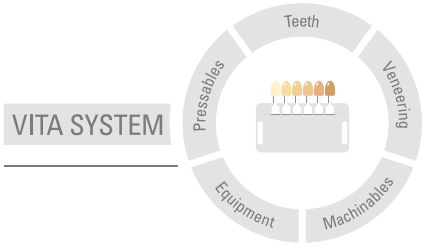
Phone +49 (0) 7761 / 56 22 22
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8 a.m. to 5 p.m. CET
Email info@vita-zahnfabrik.com

Additional international contact information can be found at **www.vita-zahnfabrik.com/contacts**

More information about VITA YZ® **SOLUTIONS** is available at **www.vita-zahnfabrik.com/cadcam**



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Please note: Our products must be used in accordance with the instructions for use. We accept no liability for any damage resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers that are not compatible or not authorized for use with our product and this results in damage. The VITA Modulbox is not necessarily a component of the product. Date of issue of this information: 2023-09

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

VITA Zahnfabrik has been certified and the following products bear the mark

CE 0124

VITA YZ® T, **VITA YZ®** HT, **VITA YZ®** ST, **VITA YZ®** XT,
VITA YZ® T COLORING LIQUID, VITA AKZENT® **Plus**, **VITA LUMEX®** AC,

Zirkonzahn Srl. Gais has been certified according to the Medical Device Directive, and the following products bear the CE mark:

CE 0051

VITA YZ® HT SHADE LIQUID
VITA YZ® ST SHADE LIQUID
VITA YZ® XT SHADE LIQUID
VITA YZ® EFFECT LIQUID

EVE Ernst Vetter GmbH has been certified in accordance with the Medical Device Directive, and the following product bears the CE mark:

CE 0483

VITA CERAMICS Polishing Set clinical

MD Rx Only

CH REP VITA Zahnfabrik H. Rauter GmbH & Co.KG, Bad Säckingen (Germany)
Zweigniederlassung Basel c/o Perrig AG, Max Kämpf-Platz 1, 4058 Basel

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VITA

VITA Zahnfabrik H. Rauter GmbH & Co.KG
Spitalgasse 3 · 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
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