



VITA ZETA®



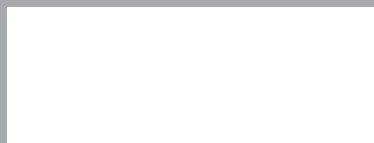
Working Instructions

HLC BOND

HC COMPOSITE

LC COMPOSITE

CC POLYMER



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The patient cases referred to here arose in cooperation with Ms Petra Gundlach, Dentist, in Hamburg / Germany.

VITA ZETA[®]

Working Instructions



VITA ZETA HLC BOND bonding system with decisive advantages in the working procedure:

A very simple working procedure requiring no complex equipment: Just mix Powder and Liquid, apply with a brush and dry using an infra-red lamp (100-150 W) for 10 minutes - that's all.

Bonding system and opaque in one

VITA ZETA HLC BOND is an efficient bonding agent for the metal/composite that is also coloured opaque. This saves one stage in the working procedure. And what's more: weak points (e.g. silanes, polymerizing shrinkage of the opaque) in the adhesive bond are eliminated. The advantage: rationalized processing and reliable bonding.

Optimum bond strength thanks to a new chemical/ physical effect

VITA ZETA HLC BOND is based on the principle of adhesive bonding and cannot be compared with crown and bridge bonding systems marketed to date. The exceptionally high bond strength is due to the synergy of various forces and properties which are based on chemical/physical principles:

- Blasting with corundum activates the alloy surface, i.e. results in a charge transfer.
- HLC BOND contains carboxyl groups which, thanks to certain additives, are aligned optimally with the activated surface of the metal.
- As HLC BOND is a polymer solution, polymerization shrinkage does not occur.
- As the chemistry of HLC BOND does not include silane compounds, there is no risk of hydrolysis and the resulting loss of chemical bond strength between metal and veneering material, even in the long term.

Application:
VITA ZETA HLC BOND serves as a bonding opaque for reliable, hydrolysis-resistant bonding of heat curing, light curing and cold curing VITA ZETA veneering resins to metal frameworks.



VITA ZETA LIGHT CURING COMPOSITE

VITA ZETA LIGHT CURING COMPOSITE (LC) is a light curing C&B paste which, for the first time ever, includes a multi-phase sintered feldspar filler. Thanks to the well-balanced particle size distribution of the multi-phase sintered feldspar, optimum abrasion resistance and a considerably higher impact resistance without brittleness are achieved.

Indications:

For veneering crowns and bridges, telescope crowns, acrylic substructures.
Manufacturing metal free crowns and 3 unit anterior bridges, inlays and veneers as well as individualizing VITAPAN acrylic teeth.
See chapter on LC COMPOSITE.



VITA ZETA HEAT CURING COMPOSITE

VITA ZETA HEAT CURING COMPOSITE (HC) is a homogeneous, ready-to-use, single component crown and bridge paste which does not contain methyl methacrylate. This veneering material is very resistant to abrasion and solvents, without being brittle.

As the plasticity of the neck, dentine and enamel resins is matched, even extensive restorations can be built up and finished in one single procedure. When used with VITA ZETA HLC BOND, the metal/composite bond strength is greatly enhanced.

Indication:

Veneering of crowns, bridges and telescopic crowns.
Preparing of metal-free crowns and full veneers in the anterior area.
Redesigning of VITAPAN acrylic teeth as well as modelling of VITAPAN teeth ground to the shell.



VITA ZETA CC POLYMER

VITA ZETA CC POLYMER is a cold curing / autopolymerizing resin. It is used for temporary restorations and extra-oral repairs. Thanks to its special material properties, particularly the hardness and elasticity of VITA ZETA CC POLYMER, it was possible to increase the resistance of the material to chemical and physical stresses in the mouth.

VITA ZETA CC POLYMER is manufactured from specially processed polymer raw materials - hence its outstanding material properties.

Indication:

Preparation of temporary crowns and bridges.
Fixation of teeth and VITAPAN teeth ground to the shell, e.g. on CoCr work.
Covering of attachments for combined work

Technical Data

VITA ZETA HLC BOND (bonding system)

Bond strength tests of the bond between ZETA HLC BOND and ZETA LC/HC were carried out at the Humboldt University of Berlin in Germany. In the shear tests, strength values of 20-25 Mpa were obtained depending on the alloy type.

VITA ZETA LIGHT CURING COMPOSITE

VITA ZETA HEAT CURING COMPOSITE

	Measuring unit	Value
Brinell hardness	MPa	278
flexural strength	MPa	110 / FISORA 107
modulus of elasticity	MPa	4500/ FISORA 7500
deflection	mm	1,5 / FISORA 0,88
water absorption	standard fulfilled	
solubility	standard fulfilled	
shade stability	standard fulfilled	
rate of polymerization	%	93
impact strength	KJ/m ²	4,60
inorganic filler content	weight %	44,3/ FISORA 58,1
toothbrush abrasion	No difference to veneering materials with a high filler content	
abrasion (2-point body contact)	8,0 N/mm ² (pressure)	40% less abrasion than in the case of veneering materials with a high filler content
abrasion (3-point body contact)	No difference to veneering materials with a high filler content	
allergic reactions	No allergic reactions known since incorporation in 1993	
plaque affinity	No plaque formation resulting from material properties known (since incorporation in 1993)	

	Measuring unit	Value
	MPa	210
	MPa	120
	MPa	2900
	mm	1,8
	standard fulfilled	
	standard fulfilled	
	standard fulfilled	
	%	99
	KJ/m ²	5,40
	weight %	20
	No difference to veneering materials with a high filler content	
	8,0 N/mm ² (pressure)	30% less abrasion than in the case of veneering materials with a high filler content
	No difference to veneering materials with a high filler content	
	No allergic reactions known since incorporation in 1993	
	No plaque formation resulting from material properties known (since incorporation in 1993)	

VITA ZETA COLD CURING POLYMER

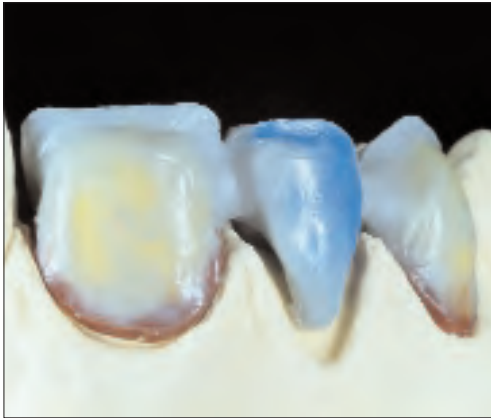
(autopolymerizing acrylic)

Physical values cannot be given for autopolymerizing materials as these fluctuate according to the mixing ratio. Furthermore, the autopolymerizing material is used only for temporary restorations and small repairs.

Material properties:

- low polymerization shrinkage
- optimal hardness
- resistance to crazing
- shade stability
- does not contain fillers
- easy handling, good modelling characteristics
- practice-oriented processing time
- easy surface polishing
- increased plaque resistance due to more homogeneous surface structures
- good working properties, excellent polishability

Framework design and preparation of frameworks



- The general principles for designing frameworks to be veneered with for composites should be heeded.



- Undercuts should be created on the surfaces of the veneer. "Micro" retentions can be applied to the approximal areas to supplement the bond strength and should be added in the case of alloys with more than 70 % gold, platinum or palladium content. In the case of veneers on "galvano" frameworks (galvanized crowns), undercuts should be created on the area to be veneered.



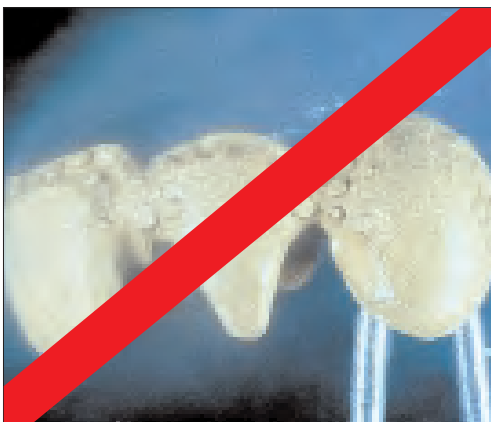
- The framework is prepared with cross-cut tungsten carbide burs according to the alloy manufacturer's instructions.
- Surfaces not to be veneered are polished with rubber polishers.



- The trimmed framework before sandblasting.



- The surfaces to be veneered should be sandblasted with 110 - 250 µm aluminium oxide at a pressure of 3 - 3.5 bar depending on the alloy type. The cervical margins must be treated as carefully as the rest of the veneer. Insufficient activation (sandblasting) results in poor bonding. Alloys lose their good physical properties if they are cast or sandblasted too often.



- The metal framework is cleaned after sandblasting. Clean only with dry-clean compressed air (water separator) or with a clean brush. **The framework must never come into contact with water!** If the surface is contaminated by contact with skin, it can be degreased with acetone.



- Optimally sandblasted metal surface ready for the application of HLC BOND.



Preparation: VITA ZETA HLC BOND



- VITA ZETA HLC Bond components are powder and liquid. If a smoother surface is required when working with ZETA HLC BOND, crush the HLC BOND powder with an acrylic spatula before mixing with HLC BOND LIQUID.

HLC BOND LIQUID

contains ethane-1, 2-diol dimethacrylate.

Irritates the respiratory organs.

Possible sensitization through skin contact.

Avoid contact with the skin.

Always work under an extraction system.



Mixing and applying:

- The HLC BOND must be mixed and applied within 10 minutes of activating (sandblasting) the metal surface. Dispense the amount of ZETA HLC BOND LIQUID corresponding to two graduations on the syringe and mix it with a small scoopful of ZETA HLC BOND on a mixing pad. The consistency thus obtained is the recommended consistency. A thicker or thinner consistency of ZETA HLC BOND results in different drying times. This amount is sufficient to coat the metal surfaces for 2 veneers.



Please note: Do not use metal instruments for mixing!

When using VITA ZETA HLC BOND for combined prostheses, we recommend coating the surfaces of the veneer or the saddle of the prosthesis **in advance** with HLC BOND and protecting these from the influence of plaster and other materials.



- Possible variation in the shading of HLC BOND LIQUID does not affect the physical properties and the bond strength of the material.



Drying:

- Various methods are available for drying:
 - with a 100-150 W infrared lamp, 10-15 min., keep restoration 5-10 cm away from lamp.
 - with a 1200 W hair dryer, dry at intervals of 2 minutes and allow to cool for 1 minute per drying procedure (at least 4 x), keep restoration 5-10 cm away from hair dryer.



Important: sway the warm air from side to side across the restoration, as well as the interior of the framework.
 - If the temperature is too high, this can lead to the formation of bubbles in the HLC BOND CONDITIONER.



- Before applying the ZETA LC resins, the ZETA HLC BOND layer must first be coated with HLC BOND CONDITIONER. Dispense one drop of HLC BOND CONDITIONER onto a glass slab. Dip the tip of the brush (VITA brush no. 0) into this drop of HLC BOND CONDITIONER. The amount of HLC BOND CONDITIONER taken up by the brush tip is sufficient to cover the surface of one veneer. After conditioning for 2 minutes, it is necessary to commence building up the ZETA LC resins.

HLC BOND CONDITIONER contains dichloromethane.
 Possible irreversible damage. Do not inhale vapors.
 Avoid contact with the eyes. Always work under an extraction system.



Please note:

Using too much HLC BOND CONDITIONER reduces the bond strength- the bond layer is too severely solubilized! Surfaces coated with ZETA HLC BOND CONDITIONER must be protected with ZETA LC resins (OPTIMIZER, NECK, DENTINE) before intermediate curing.



- ZETA HLC BOND CLEANING SOLVENT is a cleansing solution for cleaning instruments which were in contact with ZETA HLC BOND.

HLC BOND CLEANING SOLVENT contains methyl methacrylate.
 Irritates eyes, skin and respiratory organs.
 Possible sensitization through skin contact.
 Avoid contact with the skin.
 Always work under an extraction system.

VITA ZETA LIGHT CURING COMPOSITE

Standard build-up technique

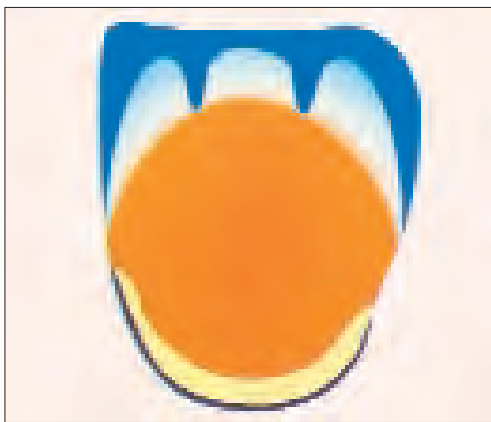


VITA ZETA LC OPTIMIZER:

- The special creamy consistency permits the application of thin layers and the smallest corrections, even in the case of already completed veneers. In the case of thin wall thicknesses it is recommended to apply LC OPTIMIZER to the entire surface of the restoration. Take up the material with a spatula or brush and apply in small portions.



Before continuing the build-up with LC DENTINE, an intermediate polymerization should be carried out.

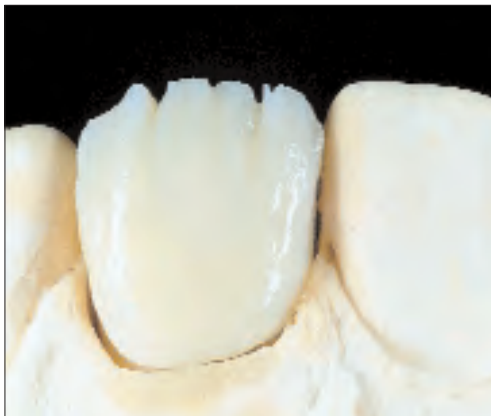


- Anterior view of the build-up



- Side view of the build-up

Build-up with ZETA LC DENTINE resin as for VMK layering technique.



- In the case of hollow **pontics** it is recommended to fill the hollow up to the level of the abutment teeth with a lighter shaded LC DENTINE and then apply LC OPTIMIZER OPAQUE DENTINE on top of this. This guarantees shade matching of abutment teeth and pontics (please heed curing instructions).
- Continue the build-up in the incisal area with ZETA LC ENAMEL or TRANSLUCENT resins.

Please note: Close container immediately after removing material for use.

● Curing, trimming and polishing:

The material must be cured according to the instructions on p. 13 and p. 33. Trim the restoration with micro-cutters at medium speed (15,000 r.p.m.) and use a suction unit. Pre-polish the surface of the veneer with suitable silicone polishers. Continue polishing with fine grit pumice powder on a polishing wheel or a goat-hair brush (in a straight handpiece). Finish off by using C&B high lustre liquid polish. Avoid excessive warming.

Please note: Careful curing and polishing is absolutely essential for achieving the best possible result and virtually prevents the accumulation of deposits which can cause discoloration.

Corrections: See p. 12 - chapter on "Individual build-up technique".

Cleaning in the ultrasonic unit and steam cleaning:

Please heed instructions on p. 13.

Storage: Do not store at temperatures over 25°C.

Keep away from direct sunlight.



Individual build-up technique



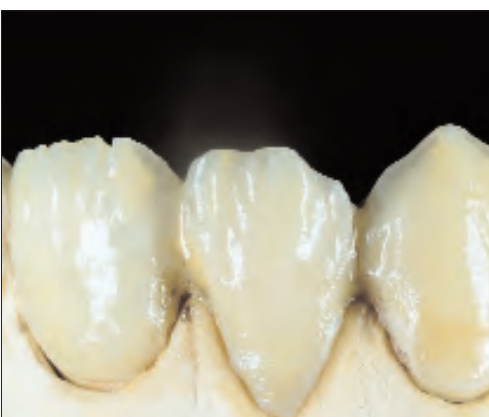
- ZETA LC OPTIMIZER offers a wide variety of possibilities for designing a ceramic veneer. The VITA Akzent Stains powder is mixed with LC NECK, DENTINE, ENAMEL or TRANSLUCENT resins. In the incisal area it is of advantage to mix the VITA Akzent Stains powder with LC OPTIMIZER WINDOW (WIN). These mixtures must not lie on the surface, but must be covered with ZETA LC resins.



- Building up the dentine with mamelon-like indentations in the incisal area.



- A mixture of LC OPTIMIZER WIN and Akzent® Stains powder is applied to the indentations. Similar mixtures are also applied to posteriors.



- When a layer thickness of 2 mm is reached, curing should be carried out (curing time as for final curing).





Curing:

- The final curing/hardening must be carried out using a light curing unit with a spectral range of 350-500 nm, with a maximum intensity of 470 nm. (see p. 31 for a list of suitable curing units). In the case of multi-unit restorations an additional curing of the shadowed zones of the interproximal areas is required in order to ensure complete curing. The restoration must be positioned accordingly in the curing unit. If the layer of resin is more than 2.0 mm thick (pontics), curing must be carried out in at least 2 stages. With a layer thickness of up to 2.0 mm, the final curing can be carried out immediately after the intermediate curing.



Trimming and polishing:

- See instructions on p. 11 in the chapter on the standard build-up technique.

Corrections: Cured ZETA LC COMPOSITE veneering material is roughened with an abrasive before applying ZETA LC OPTIMIZER. The surface must then be cleaned. Lightly coat the dried surface with ZETA LC MODELLING LIQUID before applying ZETA LC OPTIMIZER.

LC COMPOSITE MODELLING LIQUID
irritates eyes, skin and respiratory organs.
Avoid contact with the skin.
Always work under an extraction system.



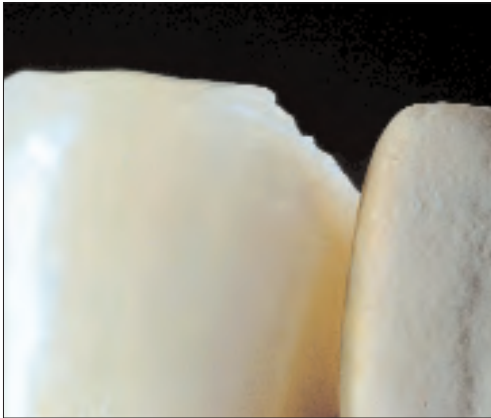
Cleaning in the ultrasonic unit and steam cleaning:

- If the restoration is left too long in the ultrasonic unit the quality of the material can be affected. The alkaline cleaning solution should not be used at a concentration of more than 10 %. The temperature of the ultrasonic bath should not exceed 40°C. High temperatures should be avoided when steam cleaning.



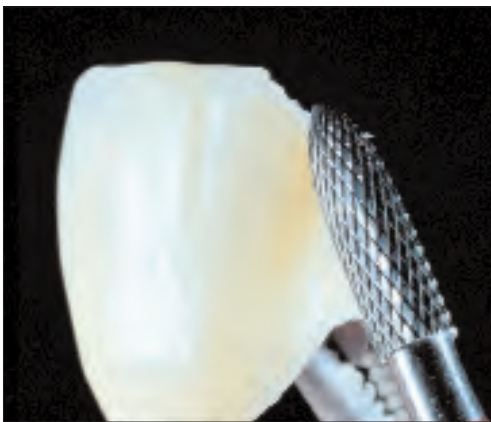
- The finished, individually built up restoration.





- If it is necessary to complete the restoration with LC COMPOSITE, corresponding to LC NECK, DENTINE, ENAMEL or TRANSLUCENT resins, the ground and cleaned surface should be coated with ZETA LC MODELLING LIQUID.

LC COMPOSITE MODELLING LIQUID
irritates eyes, skin and respiratory organs.
Avoid contact with the skin.
Always work under an extraction system.



- Grinding with a fine-cut bur.



- Adding LC ENAMEL to the surface coated with LC MODELLING LIQUID.



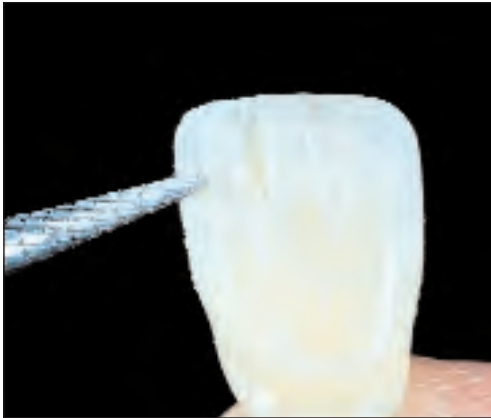
- If curing is to be carried out on the model, a plaster/acrylic insulating material or VITA ZETA LC SPECIAL INSULATING LIQUID should be applied to the plaster.

Repairs:

Extra-oral repairs can be carried out with ZETA LC COMPOSITE as well as LC OPTIMIZER resins. VITA ZETA® RESET OPAQUE can be used to cover a metal framework.

LC COMPOSITE SPECIAL INSULATING LIQUID contains cyclohexane. Irritates the skin. Avoid contact with the skin. Always work under an extraction system.

Individualization of VITAPAN® Acrylic Teeth



- Roughen the surface with coarse abrasives. Carefully clean the ground surface. Apply ZETA LC MODELLING LIQUID to the roughened surface, then complete with LC OPTIMIZER resins and cure. Build up accordingly with LC NECK, DENTINE, ENAMEL or TRANSLUCENT resins and cure. It is absolutely necessary to finish off with a final curing.

LC COMPOSITE MODELLING LIQUID
irritates eyes, skin and respiratory organs.
Avoid contact with the skin.
Always work under an extraction system.



- Apply ZETA LC MODELLING LIQUID to the roughened, ground surface.



- Build up with LC OPTIMIZER resins and carry out intermediate curing.



- Continue build-up with LC NECK, DENTINE, ENAMEL or TRANSLUCENT resins and cure. Please heed curing and polishing instructions.

VITA ZETA LC COMPOSITE Inlays



● Preparation instructions for inlays:

- The entire preparation is carried out according to the working procedure for dental ceramic inlays.
- supragingival preparation
- Make sure sufficient substance is removed during preparation. The width of the isthmus in the occlusal area should be at least 2.0 mm.
- All preparation margins must be situated outside the articulation contacts. Avoid sharp angles and edges as well as undercuts.
- Due to specific material properties, feather edges should be avoided.

Preparation on the model:

First block out undercuts and interferences.

A thin spacer layer can be additionally applied with interspace varnish.



Insulation:

- Coat the master die with VITA ZETA LC SPECIAL INSULATING LIQUID, applying beyond the preparation margins. Repeat this procedure twice.

LC COMPOSITE SPECIAL INSULATING LIQUID contains cyclohexane. Irritates the skin. Avoid contact with the skin. Always work under an extraction system.

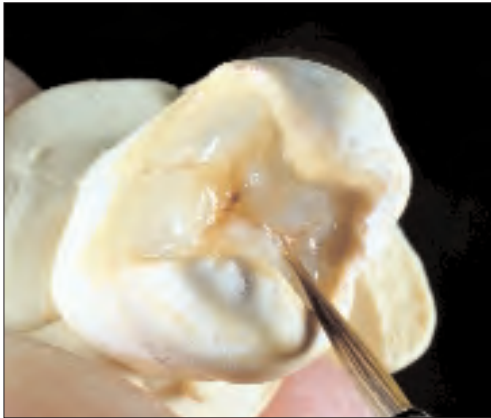


Inlay:

- The base of the inlay is built up with shade-intensive LC NECK or LC OPTIMIZER OPAQUE DENTINE resins. Carry out an intermediate curing.



- Cusps and margins can be added in reduced size with LC DENTINE in an unmixed state or with a 1:1 mixture of LC DENTINE and LC ENAMEL. The mixture can vary according to the amount of tooth substance available. Carry out intermediate polymerization.

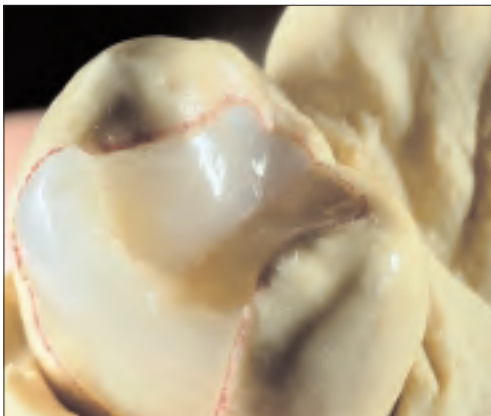


- Individualizations can be added with VITA Akzent® Stains powder mixed into LC OPTIMIZER. Carry out intermediate curing after application; If a material thickness of 2 mm is reached, a final curing must be carried out. (See instructions on curing p. 33).



- Complete the build-up with LC ENAMEL and LC TRANSLUCENT resins.

- It is recommended to complete the build-up and to polish on a duplicate die. Before incorporation, all inner surfaces of the restoration must be sandblasted with 50 - 110 µm aluminium oxide at a low pressure.



ZETA LC FISORA:

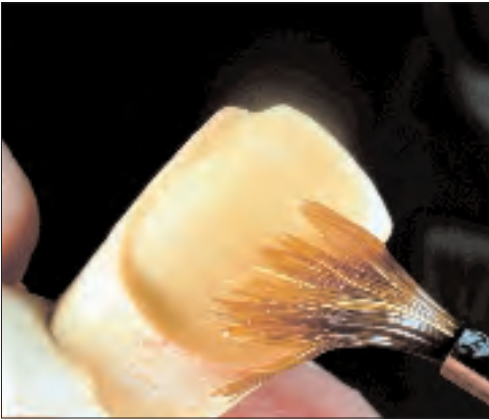
- If a more abrasion-resistant enamel layer is required, LC FISORA can be applied to LC DENTINE instead of LC ENAMEL resin. LC FISORA has a higher content of inorganic fillers. This requires a special build-up technique and surface polishing. Due to the different inorganic filler content, care should be taken when polishing the LC FISORA resins in the transition zone to the LC DENTINE. A proven method is to polish the LC FISORA resins in advance with special rubber polishers (for veneering materials or composites with a high filler content) and then to process the other areas in the usual way. Surface roughness can lead to discolorations and plaque accumulation. Polishers by Kenda, Meisinger or Komet have proven to perform well in processing.

Please note:

Only optimally cured and polished composite surfaces are resistant to discoloration and plaque. See p. 19 for cementation.



VITA ZETA LC COMPOSITE Veneers



- **Preparation instructions for veneers**

Requirements:

- anatomical reduction of hard substance by 0.7-1.00 mm
- supragingival preparation

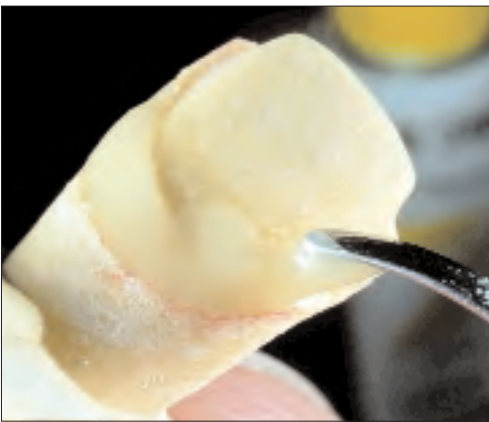
- **Vorbereitung am Modell:**

Unterschnitte, Interferenzen müssen zunächst ausgeblockt werden. Mit Distanzlack kann zusätzlich eine dünne Platzhalterschicht aufgetragen werden.

- **Insulation:**

Der Meisterstumpf wird mit VITA ZETA LC COMPOSITE SPECIAL INSULATING LIQUID bis über die Präparationsgrenze hinaus behandelt. Apply several coats of VITA CERAMICS INSULATING LIQUID (at least 2x).

LC COMPOSITE SPECIAL INSULATING LIQUID contains cyclohexane. Irritates the eyes. Avoid contact with the skin. Always work under an extraction system.



- Apply LC OPTIMIZER OPAQUE DENTINE or DENTINE to the cervical area.



- Apply differently shaded dentines when building up the tooth in reduced size.



- Individualizations can be added with VITA Akzent Stains mixed with LC OPTIMIZER resins. An additional curing is required after application.



- The tooth is then coated with LC ENAMEL or TRANSLUCENT resins.



- The marginal areas are cleaned before curing.



- After the final polishing the inner surface of the restoration must be sandblasted with **50-110 µm aluminium oxide** at a low pressure.



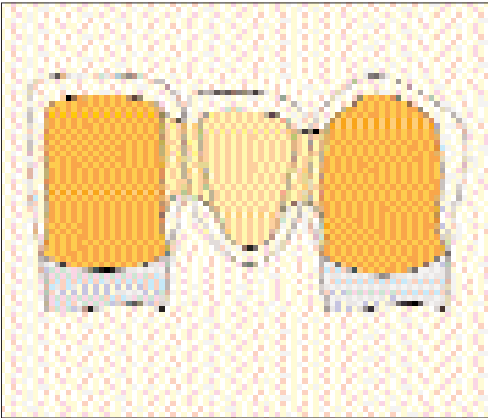
- The finished veneer.

Cementation:

For the cementation we recommended the matching components of the VITA LUTING SET. This set makes the adhesive cementation of etchable ceramic and composite restorations possible. Observe processing information.

VITA ZETA LC COMPOSITE

Framework-free crowns and 3-unit bridges as long-term temporary restorations



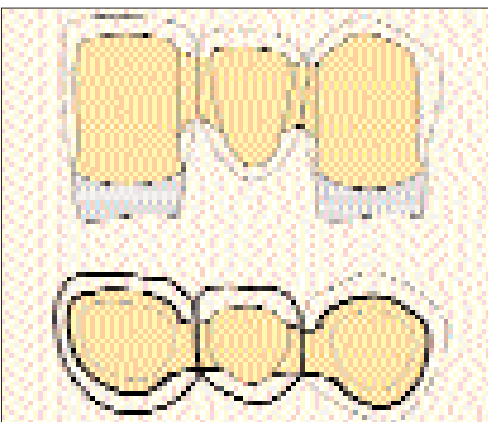
Preparation:

- A circumferential chamfer is necessary for adequate material strength at the preparation margins:

Preparing the model:

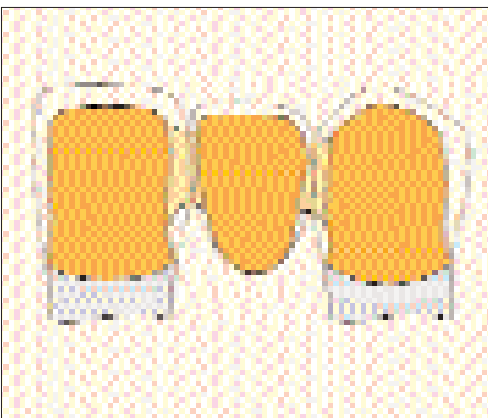
- Undercuts on the working model should be blocked out with plaster or cement. Insulate several times with VITA CERAMICS INSULATING LIQUID (at least twice).
- Copings made of LC OPTIMIZER OPAQUE DENTINE and pontic should be modelled in reduced tooth size from LC DENTINE.

Intermediate curing.

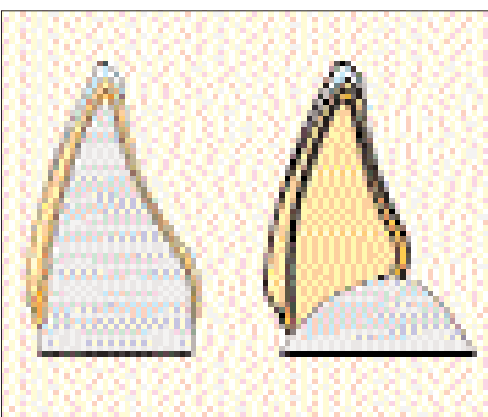


- The interdental connections must have a diameter of at least 3.5 mm. Build up the labial side of the pontic with LC DENTINE until the labial build-up level of the abutment teeth is reached.

Please heed curing instructions.

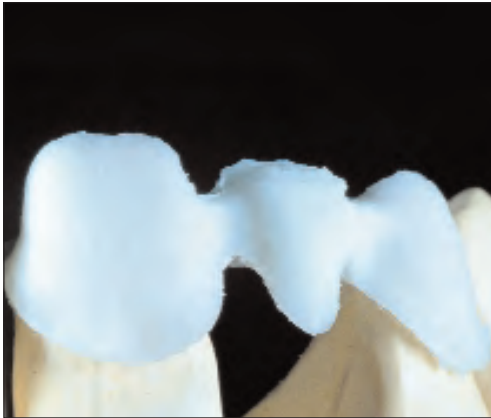


- To achieve a homogeneous shade effect, a thin layer of ZETA LC OPTIMIZER OPAQUE DENTINE is applied up to the same level as for the abutment teeth.



- Build-up of the entire bridge according to the **standard build-up technique** for VITA ZETA LC COMPOSITE.

VITA ZETA LC COMPOSITE für DCS/DC TELL® - framework



- The DC TELL® - framework consists of glass fibre-reinforced polyamide.
- DC TELL is a product of DCS/Allschwill (Switzerland).



- The framework is processed with customary cross-cut tungsten carbide burs.



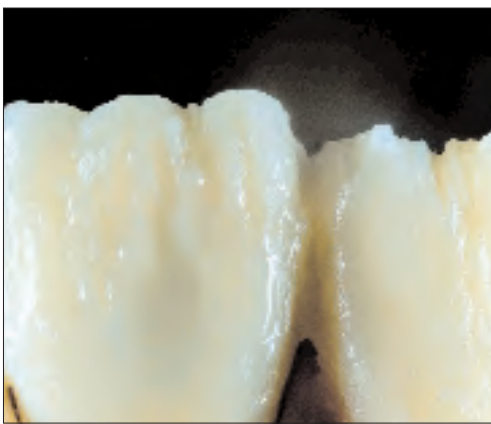
- The connection between abutment tooth and pontic must have a cross-section of at least 1.8 mm. The framework is sandblasted in the cervical area with 250 µm aluminium oxide.



- The stability of the construction is reduced when the junctures are too thin.



- Dispense a drop of VITASIL® and spread evenly over the surfaces to be veneered. Allow to take effect for 2 minutes. Observe processing information.



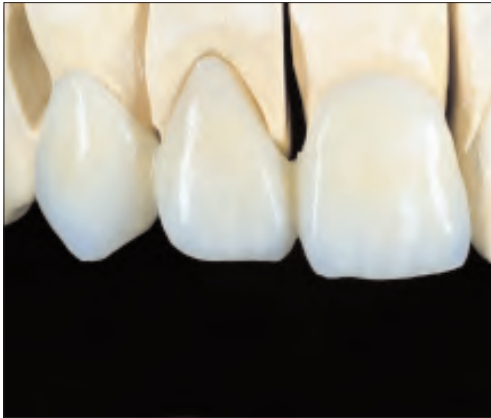
- Apply LC OPTIMIZER OPAQUE DENTINE to the entire substructure and carry out an intermediate curing. Continue the build-up according to the working procedure described on pages 13-15.



- Apply a mixture of LC OPTIMIZER WIN and VITA Akzent Stains for characterization and then build up with LC ENAMEL or TRANSLUCENT resins.



Please heed instructions for curing, trimming and polishing (see page 11).



- ZETA LC COMPOSITE on a DC TELL® - framework.



- The use of ZETA LC FISORA for a posterior restoration.



Please note:

VITA ZETA® users also have successfully manufactured veneers with ZETA LC COMPOSITE on thermoplastic acrylics and on fibre-reinforced framework materials. Working instructions are available from the manufacturers of the above products.

VITA ZETA HEAT CURING COMPOSITE



Areas of application:

- ZETA HC COMPOSITE is suitable for veneering all conventional types of crown and bridge frameworks. Thanks to its increased elasticity and impact resistance, HC COMPOSITE is also suitable for telescopic crowns. This material can be used for individual reshading and reshaping of VITAPAN acrylic denture teeth as well as for contouring shell crowns ground out of VITAPAN teeth. ZETA HC COMPOSITE can also be used for fabricating single full crowns and composite jacket crowns in the anterior region.

Please note:

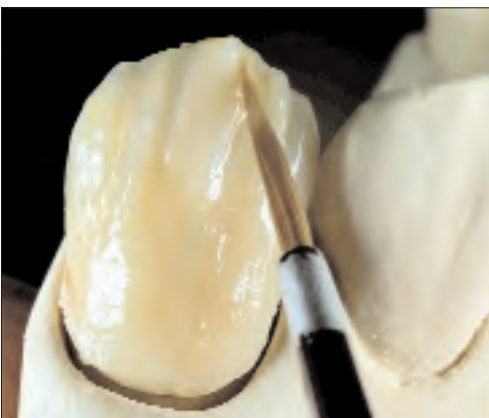
HC COMPOSITE becomes more workable after thorough mixing with a spatula.



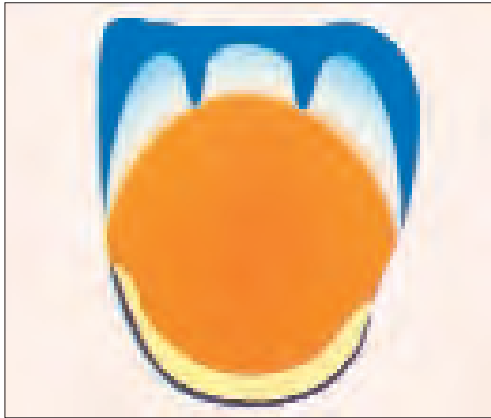
- HC NECK tapers toward the dentine and is pressed firmly onto the metal/composite juncture.
- HC DENTINE is applied with a spatula and contoured by pressing it on firmly several times.



- Incisal grooves can be created in the enamel to enhance its vitality.



- Strips of HC ENAMEL should be applied to the incisal edge, pressed firmly towards the mesial and distal aspects and tapered towards the cervical area. Excess HC ENAMEL resin can affect the optimal shade reproduction.
- The shade of HC DENTINE, ENAMEL or TRANSLUCENT resins can be altered by adding HC INTENSIVES.



- Anterior view of the build-up



- Side view of the build-up



- The HC COMPOSITE should be completely coated with HC COATING VARNISH prior to curing. The metal/composite junctures of HC composite to the metal must be likewise carefully covered with HC COATING VARNISH. Before inserting the restoration into the curing unit, the HC COATING VARNISH must be partially dried. Waiting time: around 3-5 minutes depending on the room temperature.

Curing:

See curing instructions on p. 33.

HC COMPOSITE COATING VARNISH contains methyl methacrylate. Irritates eyes, skin and respiratory organs. Possible sensitization through skin contact. Avoid contact with the skin. Always work under an extraction system.



- Completed crown.

Please note:

Material which has become too firm can be made more supple by spatulating it thoroughly.

Extra-oral **repairs** to HC COMPOSITE can be carried out with either LC COMPOSITE or CC POLYMER.

Shell crowns:

Apply HLC BOND to the framework and cure. Grind out a VITAPAN tooth to create a shell and fix it in place with wax. Prepare a mask, boil out the wax and moisten the shell with VITACOLL® bonding agent. Observe processing information. Apply HC NECK, DENTINE or ENAMEL resin to the shell and use the matrix to position it exactly on the model. Cure as in the "freehand" build-up technique.

Adding individual effects to VITAPAN® denture teeth with VITA ZETA® HC:

In order to add individual effects to a VITAPAN denture tooth, reduce its surface by approximately 0.4 mm and wetted with HC MODELLING LIQUID. Mix HC INTENSIVES into ZETA HC NECK, DENTINE or ENAMEL resin, apply to the tooth and cure as in the "freehand" build-up technique.

HC MODELLING LIQUID irritates eyes, skin and respiratory organs. Avoid skin contact. Always work under an extraction system.

VITA ZETA COLD CURING POLYMER



- **Range of applications:**

- provisional crowns and bridges
- affixing acrylic teeth in the combined prosthetic technique
- shells ground from denture teeth for manufacturing temporary restorations
- optical enhancement of combined or cast model prostheses

- **Mixing ratio:**

A large measuring scoop of CC POLYMER powder is mixed with 4 drops of CC POLYMER LIQUID.

CC POLYMER LIQUID contains methyl methacrylate.

Irritates eyes, skin and respiratory organs. Possible sensitization through skin contact. Avoid contact with the skin. Always work under an extraction system.

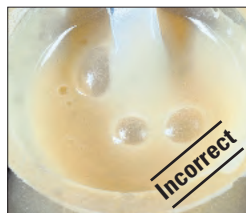


- CC POLYMER must have a fluid consistency after mixing.

Depending on the temperature, more or less CC POLYMER LIQUID should be added.



- After mixing homogeneously, the mixture has a pasty consistency and can be processed after an appropriate expansion time (approx. 1 minute).



Bubble formation and streaks can be avoided by heeding the correct mixing ratio and by homogeneous stirring with the spatula on the floor of the mixing beaker.



- A plaster/acrylic insulating material with a low viscosity should be processed in conjunction with CC POLYMER and plaster (alginate insulation). VITA ZETA LC/HC SPECIAL INSULATING LIQUID can also be used.

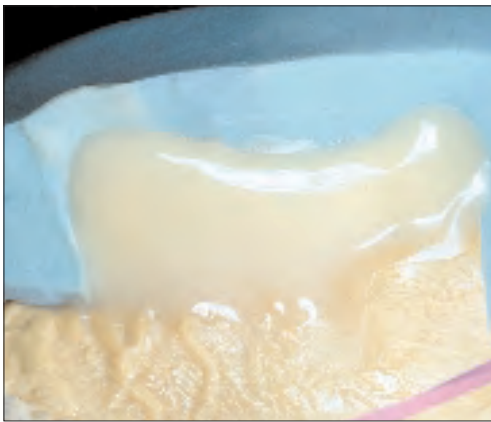
LC/HC COMPOSITE SPECIAL INSULATING LIQUID contains chlorohexane.

Irritates the skin. Avoid contact with the skin. Always work under an extraction system.

- Before placing the silicone mask onto the model it is recommended to coat less accessible areas with CC POLYMER LIQUID in advance.



- The processing time is approx. 4-5 minutes depending on the room temperature.



- Curing in a pressure vessel at 2-3 bar facilitates quick and bubble-free hardening.
- If the restoration is built up in several working and curing stages, it is necessary to trim and coat the surface with CC POLYMER LIQUID each time.
- **Curing, trimming and polishing:**
Curing time: 10 minutes. Curing in a pressure vessel improves the material properties, but is not necessary for the hardening of the material. The water temperature in the pressure polymerizer should be 40°C and curing should take place at a pressure of 4 bar. The restoration should be trimmed with rotary instruments using standard methods. After pre-polishing with rubber polishers, pumice powder, etc., the final polishing can take place.
- The areas to be corrected are roughened by grinding with abrasives. After coating the ground surface with CC POLYMER LIQUID, material is applied with the brush. This prevents a marginal gap in the metal/composite junctures.

VITA ZETA CC POLYMER

Temporary restoration step by step

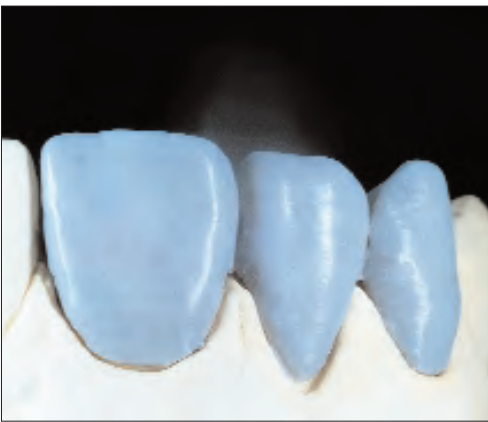
In the case of complex restorations with VITA metal ceramic or all-ceramic materials, the temporary restoration is an important aid which is of ever-increasing significance in contemporary dentistry. It serves as a basis for functional and esthetic information and helps dentist and dental technician to achieve the desired goal of treatment. The patient receives an acceptable interim restoration that gives him confidence in his everyday environment and that will not be an embarrassment to him.

Two different types of temporary restorations have become established. The selection is mainly determined by the intended duration of the interim restoration in situ and the stresses to be expected in the mouth.

CC POLYMER has proved highly suitable for temporary restorations worn on a short-term basis.

A wax-up serves as a basis for information and determines the morphological design.

- Undercuts in the working model must be blocked out. The model must also be moistened in a water bath and insulated accordingly. All optical corrections are first carried out in wax.

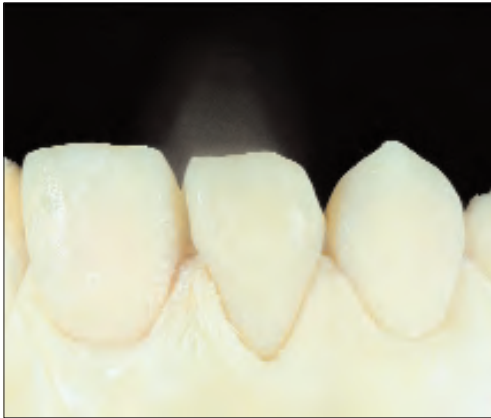


- The wax-up serves as a basis for manufacturing the silicone mask. On the basis of the diagnostic wax-up, a firm silicone mask is produced, which serves as a mould for the first pressing of the dentine core. The silicone must show fine details and demonstrate sufficient hardness.



- After positioning the silicone mask, CC POLYMER is poured into the mould.

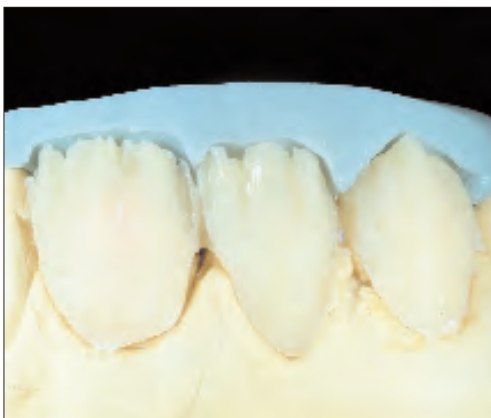




- In the first working step the basic shade of the dentine is achieved. In order to achieve a natural appearance, the pressed dentine core is cut back to receive the enamel.



- The contour of the pressed dentine core is traced in order to prepare it for taking up the enamel.



- Using the silicone mask already prepared the dentine core is homogeneously reduced in order to later carry out the required individualization. Shade nuances can be achieved by mixing VITA Akzent® Stains with CC POLYMER TRANSPARENT resins.



- Individualizations are added with an VITA Akzent®/ OPTIMIZER WIN mixture and the build-up of the restoration is completed with CC POLYMER and TRANSPARENT resins.



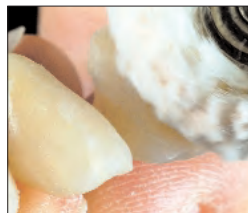
- Optimum material properties resulting from the working procedures ensure good clinical integration of the restoration.



- The restoration is trimmed with the customary type of abrasives.



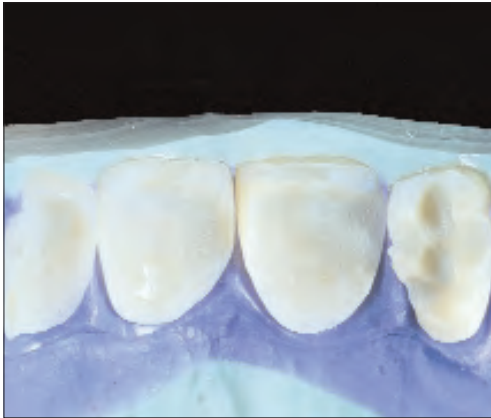
- After pre-polishing with rubber polishers, pumice (stone) powder, etc., the restoration can be polished with a goat-hair brush and a buffing wheel in a straight handpiece or a polishing motor.



- The finished temporary restoration.



Use of VITAPAN acrylic teeth for long-term temporary restorations



- The VITAPAN teeth of choice are ground out, affixed to the working model in the required position and stabilized with a silicone mask. After removing the wax and blocking out the undercuts, the model is insulated with a resin/plaster insulating material (e.g. alginate insulation). To guarantee a secure bond between VITA ZETA CC POLYMER and the acrylic tooth shell, VITACOLL® must be applied to the tooth shell. Secure bonding without a marginal gap is dependent on the use of VITAPAN® teeth.



- The autopolymerizing acrylic CC POLYMER is cast, polymerized and trimmed according to the usual procedure.



- The provisional restoration can be manufactured with or without a metal reinforcement.



- In the case of metal frameworks, the metal surface of the veneer should be coated with ZETA HLC BOND or RESET OPAQUE.

VITA ZETA LC/HC INTENSIVES

IN11 green	IN12 blue	IN13 lilac	IN14 dark brown	IN15 red	IN16 yellow	IN17 orange	IN18 beige/ brown	IN19 grey	IN20 white
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VITA ZETA LC/HC TRANSLUCENT resins

T11 blue	T12 grey	T13 gold	T14 neutral
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For technical reasons the shades shown in print may vary slightly from the original shades.

Classification of the enamel resins

VITA ZETA® LC/HC/CC in VITAPAN 3D-MASTER® shades

1M1	1M2	2L1.5	2L2.5	2M1	2M2	2M3	2R1.5	2R2.5	3L1.5	3L2.5	3M1	3M2
EN11	EN11	EN11	EN12	EN11	EN12	EN11	EN11	EN11	EN13	EN14	EN13	EN12
3M3	3R1.5	3R2.5	4L1.5	4L2.5	4M1	4M2	4M3	4R1.5	4R2.5	5M1	5M2	5M3
EN13	EN11	EN13	EN13	EN13	EN12	EN13	EN13	EN12	EN13	EN13	EN13	EN13

ZETA LC - EN 15 - grey

VITA ZETA® LC/HC/CC in VITAPAN® classical shades

A1	A2	A3	A3,5	A4	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
EN11	EN11	EN11	EN13	EN11	EN14	EN11	EN11	EN11	EN12	EN12	EN12	EN14	EN13	EN11

ZETA LC - EN 15 - grey

Classification of the neck resins

For altering the shade of the cervical area according to the VITAPAN 3D-MASTER or VITAPAN classical shade guide the shade of the corresponding DENTINE resin is modified by adding the following NECK resins (amounts given here are approximate):

VITA ZETA® LC/HC/CC in VITAPAN 3D-MASTER® DENTINE-NECK mixing ratio

Shade	1M1	1M2	2M1	2M2	2M3	3M1	3M2	3M3	4M1	4M2	4M3	5M1	5M2	5M3
DENTINE parts	–	9	–	8	6	–	5	5	–					
Parts NECK	–	1 NE 11	–	1 x NE 11 + 1 x NE 12	2 x NE 11 + 2 x NE 12	–	5 NE 12	5 NE 12		NE 12	9 x NE 12 + 1 x NE 13		NE 12	9 x NE 13 + 1 x NE 14

VITA ZETA® LC/HC/CC in VITAPAN® classical DENTINE-NECK mixing ratio

Shadee	A1	A2	A3	A3,5	A4	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
DENTINE parts	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Parts NECK	1,5 NE 14	2 NE 12	2 NE 13	6 NE 11	8 NE 14	2 NE 11	4 NE 11	5 NE 11	1 NE 14	3 NE 14	7 NE 14	8 NE 14	2 NE 13	3 NE 13	1,5 NE 14

CURING

Curing times for VITA ZETA® LC COMPOSITE

The light curing unit must have a light source with spectral range of 350 - 500 nm and a maximum intensity of 470 nm.

Company	Curing unit	Intermediate curing up to max. 1,5 mm (fixing)	Pontics up to max 2 mm	Final curing
Coltène	D.I.- 500	see final curing	see final curing	Select the program once. Curing time 7-8 min.
Dentsply	Liculite	5 min.	5 min.	10 min.
Dreve	HDS-400	5 min.	5 min.	10 min.
Espe	Alfa/Beta unit	Alfa unit	Alfa unit until surface is hardened	Beta unit: 15 min. without vacuum
GC	Labolight LV 1	2 min.	5 min.	5 min.
Hager & Werken	Speed-Labolight	30 sec.	7 min.	7 min. The unit must be equipped with 8 Osram Dulux/71 lamps
Ivoclar	Spectramat	3 min.	5 min.	5 min.
Kulzer	Dentacolor UniXS	90 sec. 90 sec.	2 x 180 sec. 2 x 180 sec.	2 x 180 sec. 2 x 180 sec.
Rsb	Luxomat (emission range: 400-500 nm) Luxomat 108			20 min. The unit must be equipped with 6 Osram Dulux/71 lamps
Schütz	PLC Spectra unit			15 min.
Shofu	Solidilite EX		5 min.	5 min.

Curing times for VITA ZETA® RESET OPAQUE

Company	Curing unit	Curing time
Hager & Werken	Speed-Labolight	3 min.
Espe	Beta unit	3 min. with vacuum
Kulzer	Dentacolor XS, UniXS	3 min.

These values are valid only for equipment which is in perfect working order.

VITA ZETA® HC COMPOSITE

- **“freehand” layering technique:**

The veneer should be **coated with HC COATING VARNISH** prior to curing - allow to dry for 3-5 min.

– curing in a pressure polymerizer, in a water bath: at 100°C for 15 min. at a pressure of **6 bar**.

- **Using the flask technique,** the VITA ZETA HEAT CURING COMPOSITE is pressed into the flask, which has been allowed to cool (do not heat the opposite half of the flask). The flask must be placed into cold water and the water slowly brought to the boil. Curing time in boiling water: 30 minutes. Do not quench.

VITA ZETA® CC POLYMER

Curing time: 10 minutes

Cure in a pressure vessel, water temperature 40°C, pressure: 4 bar.

Assortments

VITA ZETA® in VITAPAN 3D-MASTER®

HLC BOND	
Assortment 10 COLOR SET LC STARTER KIT 3M2 HC STARTER KIT 3M2	C5 SORB 3DN C5 SORB10C 3DN
LIGHT CURING COMPOSITE	
Assortment 10 COLOR SET OPTIMIZER KIT	C5 SORLC 3DN C5 SORLC10C 3DN C5 SORLCO 3DN
HEAT CURING COMPOSITE	
Assortment 10 COLOR SET	C5 SORHC 3DN C5 SORHC 10C 3DN

COLD CURING POLYMER	
Assortment – 14 Farben 6 COLOR SET Introductory Kit	C5 SORCC 3DN C5 SORCCT 3DN
RESET OPAQUE	
Assortment	C5 SORR03D

VITA ZETA® in VITAPAN® classical

HLC BOND	
Assortment Partial assortment LC STARTER KIT A3 HC STARTER KIT A3	C5 SORBN C5 SORBTN
LIGHT CURING COMPOSITE	
Assortment Partial assortment OPTIMIZER KIT	C5 SORLCN C5 SORLCTN C5 SORLCO

HEAT CURING COMPOSITE	
Assortment Partial assortment	C5 SORHCN C5 SORHCTN
COLD CURING POLYMER	
Assortment Partial assortment	C5 SORCCN C5 SORCCTN

Please note:

The shade indicator included in the 3D-MASTER assortments is intended as a guide (classification table) and is to be filled by the customer.

VITA ZETA HLC BOND CONDITIONER



hazardous
to health

Contains dichloromethane.
Possible irreversible damage.
Avoid contact with the eyes.
Always work under an extraction system.

VITA ZETA HLC BOND LIQUID



irritant

Contains ethane-1, 2-diol dimethacrylate.
Irritates the respiratory organs.
Possible sensitization through skin contact.
Avoid contact with the skin.
Always work under an extraction system.

VITA ZETA HLC BOND CLEANING SOLVENT

VITA ZETA HC COMPOSITE COATING VARNISH

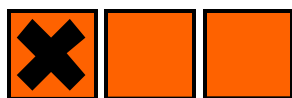


irritant,
highly flammable

Contains methyl methacrylate.
Irritates eyes, skin and respiratory organs.
Possible sensitization through skin contact.
Avoid contact with the skin.
Always work under an extraction system.

VITA ZETA HC COMPOSITE SPECIAL INSULATING LIQUID

VITA ZETA LC COMPOSITE SPECIAL INSULATING LIQUID



hazardous to health,
highly flammable,
Dangerous for the environment

Contains cyclohexane.
Irritates the skin.
Avoid contact with the skin.
Always work under an extraction system.

VITA ZETA HC COMPOSITE MODELLING LIQUID

VITA ZETA LC COMPOSITE MODELLING LIQUID



irritant

Irritates eyes, skin and respiratory organs.
Avoid contact with the skin.
Always work under an extraction system.

VITA ZETA RESET OPAQUE LIQUID



irritant

Contains ethane-1, 2-diol dimethacrylate,
2-dimethyl aminoethylmethacrylate.
Irritates eyes and respiratory organs.
Possible sensitization through skin contact.
Avoid contact with the skin.
Always work under an extraction system.

VITA ZETA CC POLYMER LIQUID



hazardous to health,
highly flammable

Contains methyl methacrylate, ethane-1,
2-di methacrylate, N,N-dimethyl-p-toluidine.
Irritates eyes, skin and respiratory organs.
Possible sensitization through skin contact.
Avoid contact with the skin.
Always work under an extraction system.

**Further details
are included in the safety
data sheets.**

The VITA ZETA® C+B materials belong to the VITAPAN® color family, they are available in VITAPAN 3D-MASTER® and in VITAPAN® classical shades (except of B1) and are hence compatible with other VITA materials and teeth.



Please note: Our products should be used according to the working instructions.

We cannot be held liable for damages resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers which are not compatible or not authorized for use with our product. Furthermore, our liability for the correctness of this information is independent of the legal ground and, in as far as legally permissible, is limited to the invoiced value of the goods supplied excluding turnover tax. In particular, as far as legally permissible, we do not assume any liability for profit loss, for indirect damages, for consequential damages or for claims of third parties against the purchaser. Claims for damages based on fault liability (culpa in contrahendo, breach of contract, tort liability, etc.) can only be made in the case of intent or gross negligence. 03/01



VITA

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