



Application Guide HeraCeram® Zirkonia 750
Ceramic for veneering zirconia and lithium
disilicate frameworks

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

HeraCeram® Zirkonia 750

For zirconia and lithium disilicate frameworks.

HeraCeram Zirkonia 750 is the perfect choice for framework materials with a CTE of 10.2 to 10.5 $\mu\text{m}/\text{mK}$, e.g. for veneering zirconia and lithium disilicate frameworks. The Stabilised Leucite Structure protects against crack propagation chipping and fracture, a recognised problem with some other Zirkonia ceramic systems. Heraceram Zirkonia 750 with it's SLS formulation gives you proven reliability exactly when and where it's needed.

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Natural aesthetics every time.

Ceramics that are perfectly adapted both in terms of their appearance and their technical properties: that means simple, reliable and fast processing with unbeatable aesthetic results. Each HeraCeram ceramic product is

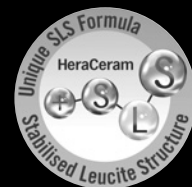
specifically tailored to suit your framework material. At the same time, every ceramic also offers consistent processing and high aesthetics for perfect results that you can rely on.

Optically perfect – with high purity quartz glass

Synthetic quartz glass is your guarantee for superior quality from all HeraCeram ceramics. Thanks to its extreme purity, it offers unique aesthetic properties, e.g. opalescence and fluorescence from within.

Technically perfect – with a stabilised leucite structure (SLS)

The stabilised leucite structure (SLS) ensures that HeraCeram ceramics are particularly resistant to stress. And the consistent level of microfine leucite crystals makes chipping a thing of the past.



Simply perfect – with a consistent processing philosophy

All HeraCeram ceramics are processed in exactly the same simplified way – allowing you to maximise your efficiency. There is also an added bonus: expensive time can be saved thanks to shorter firing and cooling times depending upon your preferred technique.

SLS

The recipe for success.

Leucite is the heart of dental ceramics. Without this silicate structure derived from mineral classed silicates and zirconia, metal ceramics as we know them today would not exist. Leucite is responsible for the thermal expansion required when bonding ceramic to metal alloys. Adjusting thermal expansion, however, is not its only function. Leucite not only increases strength but more importantly reduces the bonding material's susceptibility to stress.

The disadvantage of leucite with many metal ceramics is uncontrollable and continual growth of the leucite crystals during multiple firings. This leads to an increase in thermal expansion that can cause unpredictable stress in the frameworks metal ceramic bond. An uncontrollable increase in thermal expansion can be attributed to an unsuitable chemical composition and the type of manufacturing process.

In dental ceramics, the leucite acts like a plant that grows after absorbing nutrients. If the constituents are composed with an excess amount of Al_2O_3 and K_2O , the leucite will continue to increase/grow during multiple firing.

In order to solve this problem, Kulzer dental ceramics are manufactured using completely different processing methods. All materials are manufactured using precisely coordinated constituents together with specific processing steps. This process, which we term leucite management, produces a "Stabilised Leucite Structure" known as SLS for short. Thanks to this processing method, all Kulzer dental ceramics allow you to enjoy the benefits of leucite without the worry of adverse effects such as an uncontrollable increase in CTE values.

For the user, this means maximum reliability and less stress, with a perfect aesthetic outcome.

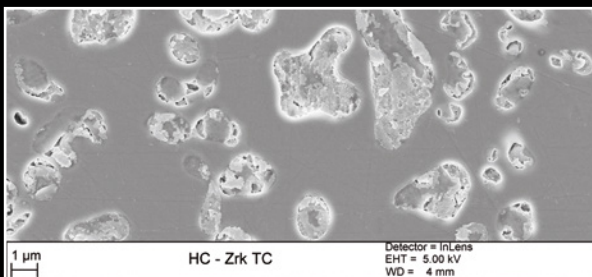


Fig. 1 HeraCeram Zirkonia etching micrograph with leucite structure.

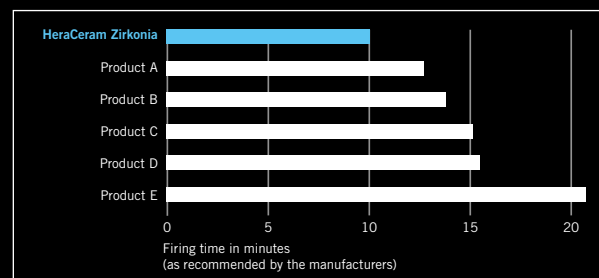


Fig. 2 Extremely short firing times.

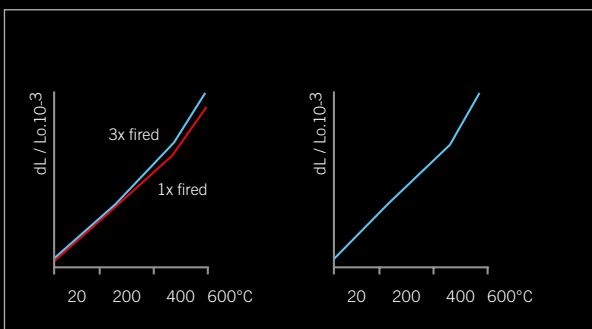


Fig. 3 Comparison of CTE increase: Unstable CTE of other dental ceramic after multiple firing. Stabilised CTE of HeraCeram ceramics after multiple firing.

Ceramic® for all that you do

Perfect frameworks for all requirements.

With HeraCeram ceramics, you can achieve aesthetic restorations that suit every need in any situation – from authentic reproduction of everyday A – D shades to skilful customisation, through to high end complex restorations with vibrant light dynamics.

Aesthetic veneering: Quite simple with standard materials, highly personalised with a wide range of custom materials or a very natural look with matrix materials. Giving you the flexibility you need for your design.

Everyday A–D Shades

Reliable reproduction
of classic A–D shades

- Opaquer set resp. ■ Liner set*
- Dentine and/or ■ Chroma
- Incisal set dentine set**
- Optional:
- Stains set
- universal

Personalised

Patient specific
shade adjustment

<ul style="list-style-type: none"> ■ Opaquer set resp. ■ Liner set* ■ Dentine and/or ■ Chroma incisal set dentine set** Optional: ■ Stains set universal 	+
<ul style="list-style-type: none"> ■ Increaser set ■ Enhancer set 	

Our starter sets: First-Touch set (A2; A3; A3,5);
Professional set (BL3; A2; A3; A3,5; B2; B3; C2; C3; D3)***

Matrix

Truly natural for highly
individualised restorations.

<ul style="list-style-type: none"> ■ Opaquer set resp. ■ Liner set* ■ Dentine and/or ■ Chroma incisal set dentine set** Optional: ■ Stains set universal 	+
<ul style="list-style-type: none"> ■ Matrix set 	

Special

Special applications

Margin set	Bleach Shades***	Pressable ceramics****	Gingiva set
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* only HeraCeram Zirkonia
** only HeraCeram Zirkonia 750
*** not available for HeraCeram Zirkonia 750
**** only HeraCeram

Perfectly tailored to your framework.



HeraCeram® Zirkonia 750

Framework preparation

Preparing the zirconia framework surface

The zirconia frameworks are cleaned with a steam jet. – Sand blasting the framework for better bonding is not necessary. Zr adhesive 750 can now be applied directly to the surface of the framework.

Preparing the lithium disilicate framework surface

- All adaptations and possible shape corrections should be made before crystallisation if possible.
- In order to avoid overheating and breakage e.g. at the margin, always work with minimal pressure and adjusted rotational speed. Please observe the recommendations of the manufacturer for the rotating instruments.
- The minimum thickness required for lithium disilicate frameworks must be maintained.
- After completion of framework processing, the items must be thoroughly cleaned of abrasive dust and abrasive residues, e.g. using a steam jet.

NOTE: For preparation of the finalised framework, only use instruments which are recommended by the respective manufacturers e.g. Ivoclar Vivadent for the processing of lithium disilicate.

Do not sand blast the lithium disilicate surfaces with Al₂O₃ or glass beads.

Ceramic firing

Instructions for firing HeraCeram Zirkonia 750 can be found at page 31.

IMPORTANT INFORMATION The following data is based on procedures, equipment and materials recommended by Kulzer. If products from other manufacturers are used, the corresponding instructions for use and operating instructions must be observed.

VIDEOS: Watch videos about the different layering versions of HeraCeram Zirkonia 750.



Everyday layering

Start video
kulzer.com/video_HC750_everyday



Personalised layering

Start video
kulzer.com/video_HC750_personalised



Matrix layering

Start video
kulzer.com/video_HC750_matrix

Adhesive 750

The adhesive has the ability to fully wet zirconia and lithium disilicate surfaces perfectly and thus ensure an optimum bond. The adhesive 750 is fluorescent and provides nature-like fluorescence from the depth of the restoration.



Fig. 4 Zirconia frames (white) ready for application of adhesive 750.

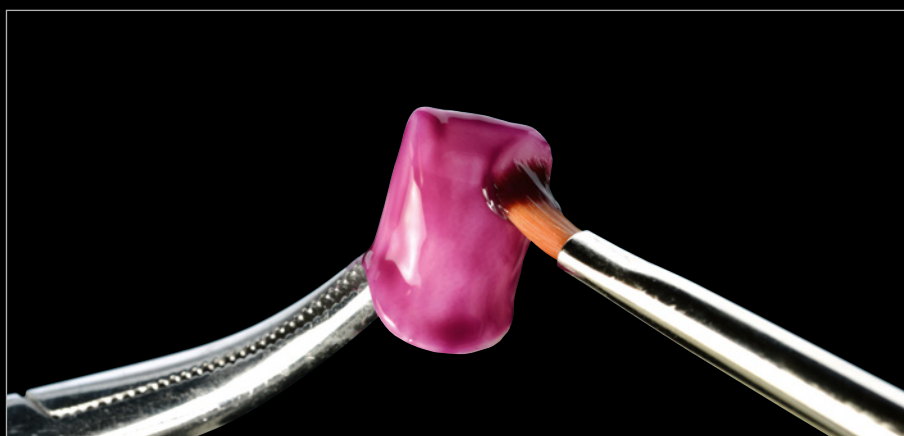


Fig. 5 Applying a uniform coat of Adhesive 750.



Fig. 6 Note the glossy appearance of the adhesive 750 after firing.

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Fig. 7 Application of the adhesive 750 on lithium disilicate frameworks.



Fig. 8 Slightly glossy adhesive layer on the lithium disilicate surface after firing.



Fig 9 Image at tooth 21: Ideal fluorescence on a ceramic frame. Image at tooth 11: Zero fluorescence after none application of Adhesive 750

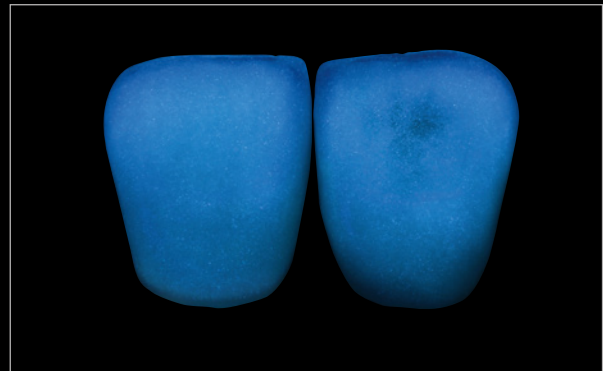


Fig. 10 Image at tooth 21: Ideal fluorescence on a finished restoration. Image at tooth 11: Without adhesive 750, shine-through on the none fluorescent frame.

PLEASE NOTE: The Adhesive 750 should be applied in a thin, uniform coat to the surfaces of the framework by using a HeraCeram opaque paste brush. The firing temperature on zirconia is 800°C and on lithium disilicate is 750°C, holdtime is 1 minute. (see the recommended firing cycles at page 31)

Dentine-enamel build up

HeraCeram Zirkonia 750 dentine and/or chroma dentine can be used for layering of the dentine core.

The dentine is highly transparent. This promotes brilliance but results in the shade of the framework having a stronger influence on the shade and brightness.

The underlying colour of zirconia frameworks are not standardised and may differ significantly in chroma and brightness from the desired tooth shade.



Fig. 11 The colour and brightness are very close to that of the desired tooth shade.

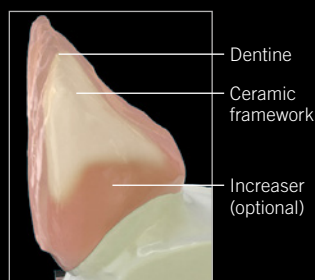


Fig. 11a In this case, the dentine core can be built up using dentine material.



Fig.12 This framework differs significantly in colour and brightness from the target shade.

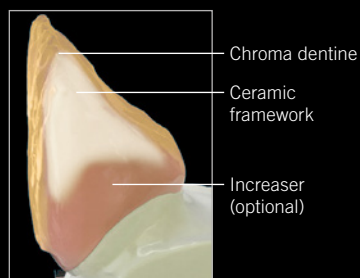


Fig.12a The use of chroma dentine is recommended for build up of the dentine core.



Fig. 13 The colour does not correspond to the desired shade group.

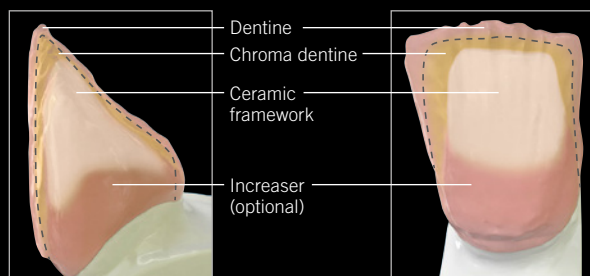


Fig. 13a Depending on the available space, the dentine core can be shaped using a combined layering of dentine and chroma dentine.

Chroma dentine (e.g. CD A3) is the same colour as the corresponding dentine (e.g. D A3). Its high colour density conceals the framework structures better and thus compensates differences in shade between the framework and the desired tooth shade. This allows the technician to adapt a preferred layering scheme to suit all indications.

The dentine core can be completely or partially built up with chroma dentine.

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Everyday layering.

PLEASE NOTE: When grinding ceramic it is essential to wear a mask and safety glasses and use a dust extractor. Avoid inhaling dust.



Fig. 14 In order to achieve classic shades, HeraCeram Zirkonia can be built up in two simple layers using dentine and/or Chroma dentine and enamel depending on the shade of the framework.



Start video

www.kulzer.com/video_HC750_everyday



Fig. 15 The dentine body can either be built up directly or first built up full size before cut back – this provides for better control over dimensions and positioning.



Fig. 16 Completion with enamel powder (See colour mapping table at page 30).



Fig. 17 The cut back comprises the incisal edge of the dentine and tapers off towards the lower third of the tooth.



Fig. 18 By inserting transparent wedges, the incisal area can be additionally individualised.



Fig. 19 HeraCeram Zirkonia after the first firing.

HeraCeram® Zirkonia 750

Everyday layering.



Fig. 20 The appropriate ceramics (dentine, incisal or transparent) are then built up to compensate for firing shrinkage and finalisation of the shape before being fired with the "Dentine 2" cycle.



Fig. 21 The restoration after the second firing.



Fig. 22 If no further ceramic needs to be added, the ceramic should be ground with diamond burs to finalise the shape and surface morphology.

Glaze firing

HeraCeram stain liquids have the same refractive index as HeraCeram. The layering and shade effects can be made visible by wetting the ceramic surface with stain liquid. This allows special effects created with glaze and stains to be evaluated more easily.

The level of glaze and texture of the ceramic surface can be influenced while firing the glaze by adjusting the temperature, hold time and final temperature. Further influencing factors are the type of surface finishing and preparation for glaze firing. Therefore, the settings quoted

for glaze firing may only be considered as guidelines which have to be adjusted to the desired outcome. The firing cycle is shown under Glaze

Firing, see glaze firing programm in capture Firing Programmes.

HeraCeram Zirkonia 750 can also be polished by hand. Our Signum HP diamond polishing paste provides an excellent surface finish.

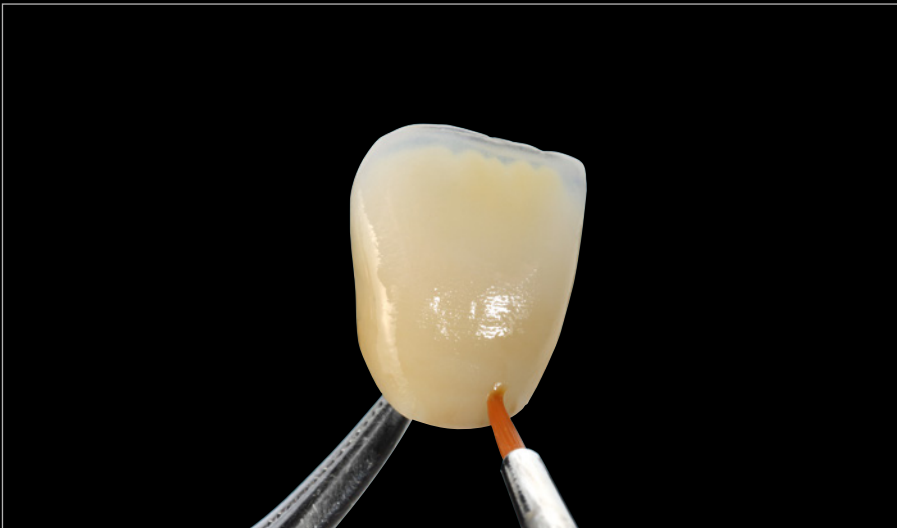


Fig. 23 Wetted surface with HeraCeram stain liquid.

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Everyday layering.

Correction ceramic is for adjustment after the glaze firing, e. g. building up contact areas – its firing temperature of 715°C is well below dentine firing temperature. Correction material is unshaded and transparent. If the corrections need shading, it can be mixed with any of the HeraCeram

Zirkonia 750 ceramics. Depending on the mixing ratio, the firing or processing temperature of the correction material must be increased (e. g. 1:1 mixture – Firing temperature approx. 730°C).



Fig. 24 In reflected light after first stage polishing.

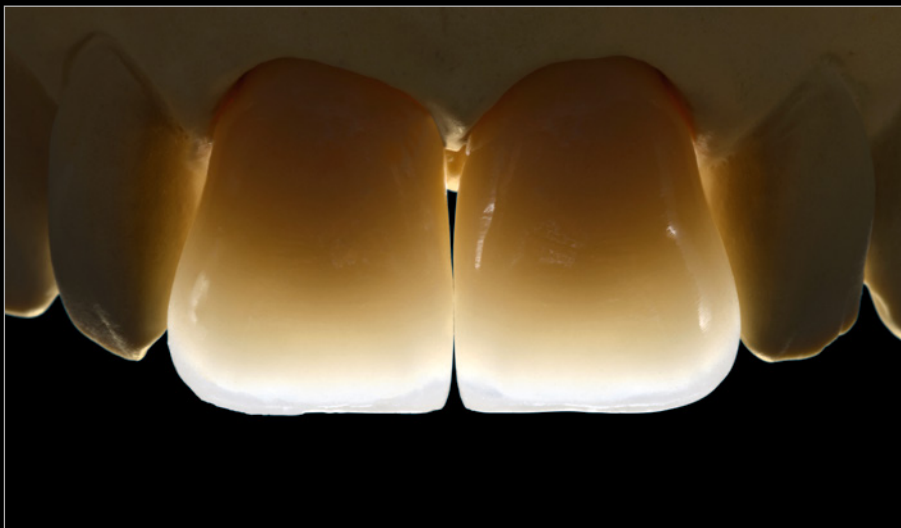


Fig. 25 In transmitted light after glaze firing.

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Personalised layering.

Increaser

The use of increasers improves control of the effect of the shade in all constrained spaces, such as for example, in the cervical region and if the framework shade differs greatly from the desired target shade. Likewise, excellent harmonisation of optical differences resulting from very wide variations in layer thickness, for example, in bridge sections, is possible.

For distinctive (patient-oriented) characterisations and individual modifications, 6 highly chromatised increasers are available in Peach (INP), Solaris (INS), Mango (INM), Orange (INO), Caramel (INC) and Taiga (INT).

A complete list of the colour mapping of the HeraCeram Zirkonia 750 materials can be found in Section E.



Fig. 26 Amazing personalised results can be achieved in just a few easy steps.



Start video

www.kulzer.com/video_HC750_personalised



Fig. 27 (Teeth: 13–23): Increasers enhance the chroma and are placed in critical areas, if necessary without further layering, or wherever a frame or an area has to be masked properly even where only limited space is available.

HeraCeram® Zirkonia 750

Personalised layering.

For distinctive (patient-oriented) characterisations and individual modifications, 6 highly chromatised increasers are available.

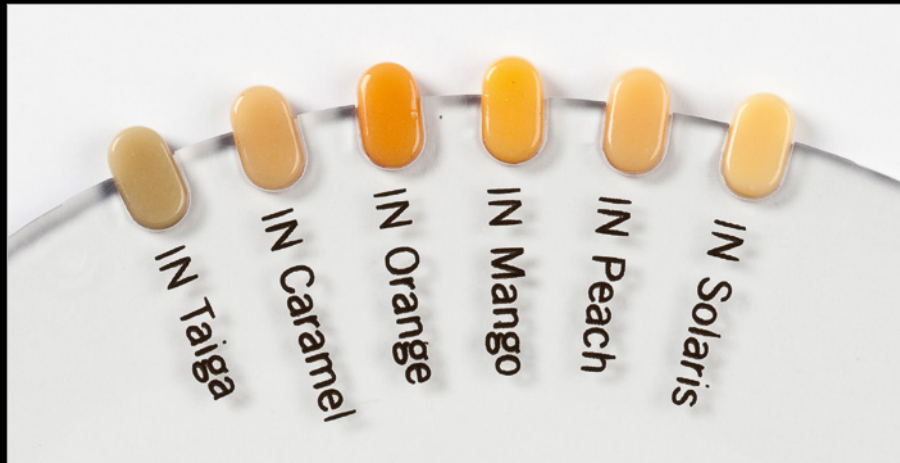


Fig. 28 Increaser colour indicator.



Fig. 29 Crown contours built up fully with dentine and/or Chroma dentine and cut back...



Fig. 30...and adapted to the desired contour.

Enhancer

Enhancers are customised transparent ceramics with which the hue or brightness of the layering can be influenced slightly but without affecting the character of the shade. This enables the typical shade tones of central and lateral

incisors as well as canines to be reproduced easily. Even those deviations in shade which cannot be shown on a shade guide can be achieved in a controlled manner using the 6 Enhancers.



Fig. 31 The effect created by Enhancers: Once the dentine has been cut back, the mamelons are formed smoothly with a brush. After that...



Fig. 32 ... the correct incisal ceramic for the shade is applied and feathered toward the dentine body. The restoration is then customised by completing the build up with Enhancers.

HeraCeram® Zirkonia 750
Personalised layering.



Fig. 33 The desired effect can thus be nuanced with correction layering or neutral shape corrections undertaken with enhancers.



Fig. 34 A highly attractive representation showing outstanding aesthetic results.

Mask

Incisal like ceramic with increased opacity, balances the transparency so that on the one hand, the in-depth effect is retained yet on the other hand the structure of the frameworks can no longer be perceived. MA bright and MA shadow can also be used to modify brightness.



Fig. 35 The Mask components and a typical example of how they are applied: After the body has been built up and cut back ...



Fig. 36 ... a thin layer of Mask material is applied to the incisal area of the denture to mask the oversized framework.

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Personalised layering.



Fig. 37 Then as usual ...



Fig. 38...built up again
incisal and transparent
materials.



Fig. 39 With only minimal
yet efficient effort, results
can be achieved which are
a pleasure to see.

HeraCeram® Zirkonia 750

Matrix layering.

Individualised layering with the Matrix Set

Custom build up concentrates on reproducing patient specific shades and shade characteristics with their light optical elements such as brightness, transparency, fluorescence and opalescence.

The ceramic compounds of the Matrix set have remarkable aesthetic properties. With their easy layering, they make completely natural results possible. The Matrix aesthetic concept, which is developed in cooperation with MDT Paul A. Fiechter, has a simple layered structure that is easy to implement.

Explanation of the Matrix components

- **MD Mamelon Dentine; SD Secondary Dentine** – Ceramics which balance chroma and fluorescence to illuminate the mamelon structures naturally.
 - **VL Value** – Highly fluorescent ceramics for influencing the brightness in the incisal region.
 - **OS Opal Incisals** – These incisal ceramics replace the corresponding standard incisal materials. They are arranged and used in the same manner.
 - **OT Opal Transpa** – Transparent ceramics for use with custom build up techniques, which reflect the spectrum of natural enamel.
 - **OT1 – OT10** – Neutral opalescence, where the concentration increases from OT1 to OT10, whereby the transparency decreases. OT1 is the most transparent Opal ceramic. OT10 is whitish opal.
- OTY; OTB; OTA; OTG and OT Ice: Opal Transpa ceramics with modified shades
- OT Yellow
 - OT Blue
 - OT Amber
 - OT Grey
 - OT Ice



Fig. 40 Matrix shade guide.

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Matrix layering.



Fig. 41 Mixing the appropriate shade of dentine with mamelon or secondary dentine increases its chroma in the cervical region. These compounds intensify the colours' luminosity with their matching of chroma and fluorescence. (Alternatively, the colour-coordinated Increasers can also be used).



Start video

www.kulzer.com/video_HC750_matrix



Fig. 42 The crowns are built up fully with dentine or chroma dentine to allow them to be cut back in a controlled manner.



Fig. 43 The central incisor has been cut back.



Fig. 44 To control the brightness or partial brightening of the dentine, the value materials in the incisal region are somewhat thicker (about 0.3 mm) and layered to the tooth with thin tapering.

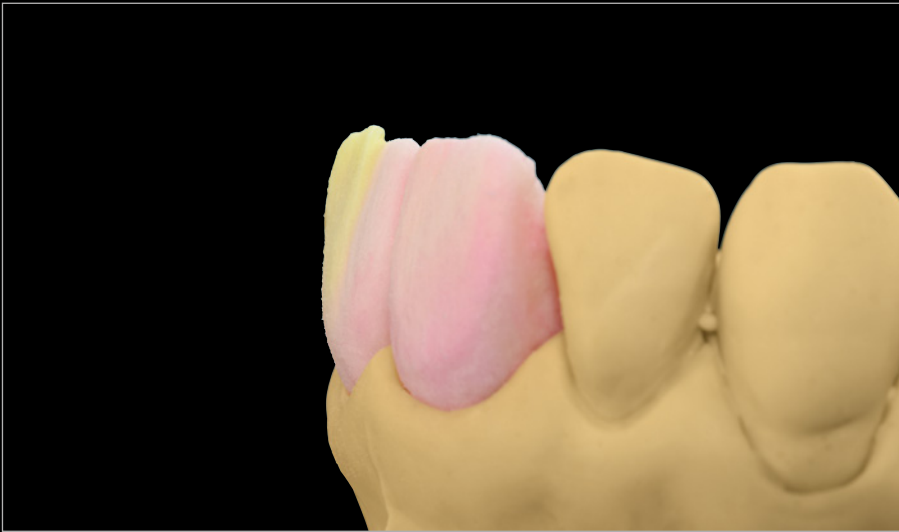


Fig. 45 Smooth transitions are important to avoid distinct borders between the value material and base shade.



Fig. 46 ...and contoured like mamelons with a brush. This creates impressive interaction between the lighter and darker shaded areas. The resulting mamelon structures are further illuminated from within the layers by the highly fluorescent value materials.



Fig. 47 A ridge of e.g. Opal transpa Ice is laid over the mamelons.

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Matrix layering.

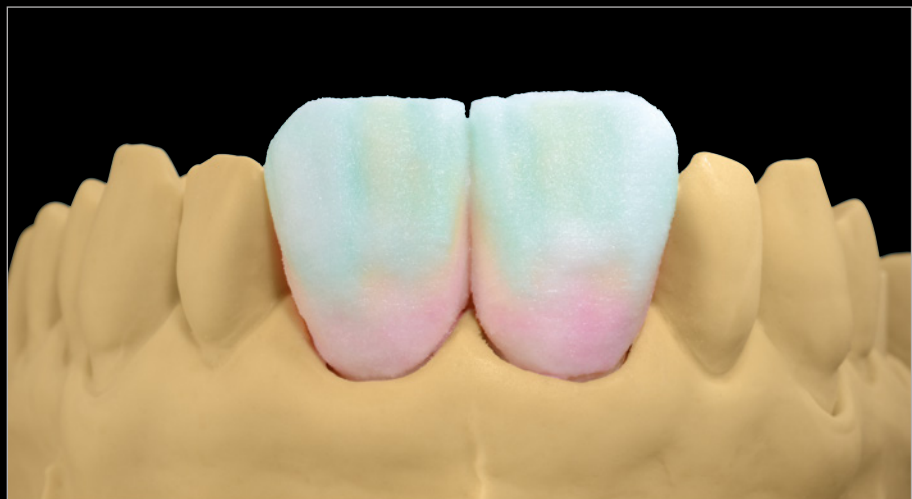
Fig. 48 The mamelon structures are then overlaid with Opal incisal.



Fig. 49 The desired anatomical contours are then built up with the correct shade of Opal incisal or various Opal Transpa materials.



Fig. 50 Fully built up crown.



Glaze firing



Fig. 51 Final stage ready for glaze and/or polish.



Fig. 52 In transmitted light.

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Margin

Use of shoulder materials

Shoulder materials (margin) can also be used for all-ceramic restorations, for example, if the framework material in the marginal area of the crown adversely affects the natural aesthetics or the framework structure is to be corrected. HM shoulder materials are characterised

above all by their higher temperature stability and remain stable in subsequent firing. On the other hand, low-fusing LM shoulder materials (firing temperature 715°C) can be used for corrections to the finished restoration.



Fig. 53 Absence of margin closure in the disto-cervical region of the crown.



Fig. 54 HeraCeram insulation should be applied directly to the plaster surface. Previous sealing of the plaster surface impairs the insulating effect.

First layer with HM shoulder material



Fig. 55 The shoulder material is mixed with the SM liquid and applied in the cervical area of the crown and fired at 780 °C.



Fig. 56 After adjustment the ceramic shoulder fits perfectly.

LM shoulder material (low fusing)

With the LM shoulder materials, the ceramic shoulders can be produced after the actual veneering, in other words, after the glaze firing. With their low processing

temperature of 715°C, they are also suitable for all other adjustments, e.g. shape corrections or contact point additions.



Fig. 57 Finished veneer crown with incomplete margin closure



Fig. 58 Correction of the margin fitting with LM shoulder material.



Fig. 59 Correction of the contact point.

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Colour mapping table.

Colour mapping table																
	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Increaseer	INA1	INA2	INA3	INA3.5	INA4	INB1	INB2	INB3	INB4	INC1	INC2	INC3	INC4	IND2	IND3	IND4
Increaseer			INC	INC	INC			INS	INS		INT	INT	INT	INT	INT	INT
Dentine	DA1	DA2	DA3	DA3.5	DA4	DB1	DB2	DB3	DB4	DC1	DC2	DC3	DC4	DD2	DD3	DD4
Chroma Dentine	CDA1	CDA2	CDA3	CDA3,5	CDA4	CDB1	CDB2	CDB3	CDB4	CDC1	CDC2	CDC3	CDC4	CDD2	CDD3	CDD4
Incisal	S1	S1	S2	S2	S4	S1	S1	S2	S4	S1	S3	S3	S3	S1	S2	S2
Mamelon, Secondary Dentine	MD1	MD1	SD2	SD2	SD2	MD2	MD2	MD3	MD3	MD2	SD1	SD2	SD2	MD1	MD3	MD1
Value	VL1	VL2	VL3	VL4	VL4	VL1	VL2	VL3	VL4	VL1	VL2	VL3	VL4	VL2	VL3	VL4
Opal Incisal	OS1	OS1	OS2	OS2	OS4	OS1	OS1	OS2	OS4	OS1	OS3	OS3	OS3	OS1	OS2	OS2
Margin HM/M	1	1	2	2	6	3	3	4	4	1	1	6	6	1	2	4

All stains and liquids can be used for HeraCeram, HeraCeram Zirkonia and HeraCeram Zirkonia 750.

HeraCeram® Zirkonia 750

Firing programmes.

IMPORTANT: The firing temperatures quoted here are guidelines only. Deviations may occur due to differences in furnace performance and may have to be compensated for if necessary.

General firing programmes

	For Zirconiumdioxide-Frameworks						For Lithium-Disilicate-Frameworks							
	Adhesive	Margin	HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin	HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
Preheating or starting temperature [°C]	500	500	500	500	500*	500	500	400	400	400	400	400*	400	400
Predrying and pre-heating time [min]	6	6	6	6	5	5	5	6	6	6	6	5	5	5
Heat rate [°C/min]	75	60	60	60	60	60	60	50	50	50	50	60	50	50
Final temperature [°C]	800	780	750	745	725	720	720	750	780	750	745	725	715	715
Holding time [min]	2	1	1	1	0,5-1	1	1	1	1	1	1	0,5-1	1	1
Vacuum start [°C]	500	500	500	500	–	500	500	400	400	400	400	–	400	400
Vacuum stop [°C]	800	780	750	745	–	720	720	750	780	750	745	–	715	715

Heramat C/C2/C3/C3 press

	For Zirconiumdioxide-Frameworks						For Lithium-Disilicate-Frameworks							
	Adhesive	Margin	HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin	HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
START [°C]	500	500	500	500	500*	500	500	400	400	400	400	400*	400	400
DRY [min]	05:00	05:00	05:00	05:00	04:00	04:00	04:00	05:00	05:00	05:00	05:00	04:00	04:00	04:00
PRE HEAT [min]	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
HEAT RATE [°C/min]	75	60	60	60	60	60	60	50	50	50	50	60	50	50
HIGH TEMP [°C]	800	780	750	745	725	720	720	750	780	750	745	725	715	715
HOLD [min]	02:00	01:00	01:00	01:00	0:30-01:00	01:00	01:00	01:00	01:00	01:00	01:00	0:30-1:00	01:00	01:00
TEMPER [°C]	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TEMP HOLD [min]	–	–	–	–	–	–	–	–	–	–	–	–	–	–
COOL TIME [min]	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V ON [°C]	500	500	500	500	–	500	500	400	400	400	400	–	400	400
V OFF [°C]	800	780	750	745	–	720	720	750	780	750	745	–	715	715
V HOLD [min]	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*when using Stains and Glaze pastes, starting temperature 600 °C!

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Firing programmes.

Austromat 3001/Press-i-dent												
For Zirconiumdioxide-Frameworks	Adhesive	C500	T300•L9	T60	V9	T075•C800	V0	T120	C0	L0	T2	C500
	Margin HM	C500	T300•L9	T60	V9	T060•C780	V0	T60	C0	L0	T2	C500
	Dentine 1	C500	T300•L9	T60	V9	T060•C750	V0	T60	C0	L0	T2	C500
	Dentine 2	C500	T300•L9	T60	V9	T060•C745	V0	T60	C0	L0	T2	C500
	Glaze*	C500	T240•L9	T60	T060•C725	T30	C0	L0	T2	C500		
	Correction COR/LM	C500	T240•L9	T60	V9	T060•C720	V0	T60	C0	L0	T2	C500
For Lithium-Disilicate-Frameworks	Adhesive	C400	T300•L9	T60	V9	T050•C750	V0	T60	C0	L0	T2	C400
	Margin HM	C400	T300•L9	T60	V9	T050•C780	V0	T60	C0	L0	T2	C400
	Dentine 1	C400	T300•L9	T60	V9	T050•C750	V0	T60	C0	L0	T2	C400
	Dentine 2	C400	T300•L9	T60	V9	T050•C745	V0	T60	C0	L0	T2	C400
	Glaze*	C400	T240•L9	T60	T060•C725	T30	C0	L0	T2	C400		
	Correction COR/LM	C400	T240•L9	T60	V9	T050•C715	V0	T60	C0	L0	T2	C400

Austromat M												
	For Zirconiumdioxide-Frameworks						For Lithium-Disilicate-Frameworks					
	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
START	500	500	500	500	500*	500	400	400	400	400	400*	400
→	0	0	0	0	0	0	0	0	0	0	0	0
↑	5	5	5	5	4	4	5	5	5	5	4	4
→	1	1	1	1	1	1	1	1	1	1	1	1
VAC	9	9	9	9	0	9	9	9	9	9	0	9
°C ▶ min.	75	60	60	60	60	60	50	50	50	50	60	50
END	800	780	750	745	725	720	750	780	750	745	725	715
→	1:00	1:00	1:00	1:00	0:30–1:00	1:00	1:00	1:00	1:00	1:00	0:30–1:00	1:00
↘	0	0	0	0	0	0	0	0	0	0	0	0
↘	0	0	0	0	0	0	0	0	0	0	0	0

*when using Stains and Glaze pastes, starting temperature 600°C!

IMPORTANT: The firing temperatures quoted here are guidelines only. Deviations may occur due to differences in furnace performance and may have to be compensated for if necessary.

Austromat 624/654 press-i-dent

For Zirconiumdioxide-Frameworks

	Adhesive		Margin HM		Dentine 1		Dentine 2		Glaze		Correction COR/LM							
Drying		00:00		00:00		00:00		00:00		00:00		02:00		00:00				
Closing Time		05:00		05:00		05:00		05:00		05:00		04:00		04:00				
Pre heat	500°C	01:00	500°C	01:00	500°C	01:00	500°C	01:00	500°C*	01:00	500°C	01:00						
High Temp	800°C	75°C/min	01:00	780°C	60°C/min	01:00	750°C	60°C/min	01:00	745°C	60°C/min	01:00	725°C	60°C/min	01:00	720°C	60°C/min	01:00
Temper																		
Cooling																		
VAC	100%	01:00	100%	01:00	100%	01:00	100%	01:00	100%	01:00	0%	01:00	100%	01:00				

Austromat 624/654 press-i-dent

For Lithium-Disilicate-Frameworks

	Adhesive		Margin HM		Dentine 1		Dentine 2		Glaze		Correction COR/LM							
Drying		00:00		00:00		00:00		00:00		00:00		02:00		00:00				
Closing Time		05:00		05:00		05:00		05:00		05:00		04:00		04:00				
Pre heat	400°C	01:00	400°C	01:00	400°C	01:00	400°C	01:00	400°C*	01:00	400°C	01:00						
High Temp	750°C	50°C/min	01:00	780°C	50°C/min	01:00	750°C	50°C/min	01:00	745°C	50°C/min	01:00	725°C	60°C/min	01:00	715°C	50°C/min	01:00
Temper																		
Cooling																		
VAC	100%	01:00	100%	01:00	100%	01:00	100%	01:00	100%	01:00	0%	01:00	100%	01:00				

*when using Stains and Glaze pastes, starting temperature 600°C!

HeraCeram® Zirkonia 750

Firing programmes.

Multimat MC II/Mach 2/Touch & Press												
	For Zirconiumdioxide-Frameworks						For Lithium-Disilicate-Frameworks					
	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
Preheat temp. [°C]	500	500	500	500	500*	500	400	400	400	400	400*	400
Drying [min]	5.0	5.0	5.0	5.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0
Preheating [min]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Vacuum time [°C]	1.0	1.0	1.0	1.0	0	0.1	0.1	0.1	0.1	0.1	0	0.1
Firing time [min]	2.0	2.0	2.0	2.0	0.5–1.0	1.0	1.0	1.0	1.0	1.0	0.5–1.0	1.0
Firing temp. [°C]	800	780	750	745	725	720	750	780	750	745	725	715
Heat rate [°C/min]	75	60	60	60	60	60	50	50	50	50	60	50
Vacuum [hPa]	50	50	50	50	0	50	50	50	50	50	0	50

Programat X1/EP 600/P300/P500/P700/EP3000/EP5000												
	For Zirconiumdioxide-Frameworks						For Lithium-Disilicate-Frameworks					
	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
Standby temp. [°C]	500	500	500	500	500*	500	403	403	403	403	403*	403
Clos. time [min]	6	6	6	6	5	5	6	6	6	6	5	5
Heat rate [°C/min]	75	60	60	60	60	60	50	50	50	50	60	50
Firing temp. [°C]	800	780	750	745	725	720	750	780	750	745	725	715
Holding time [min]	2	1	1	1	0.5–1	1	1	1	1	1	0.5–1	1
Vac. ON [°C]	500	500	500	500	–	500	400	400	400	400	–	400
Vac. OFF [°C]	1° below T	1° below T	1° below T	1° below T	–	1° below T	1° below T	1° below T	1° below T	1° below T	–	1° below T

Vario 200/300												
	For Zirconiumdioxide-Frameworks						For Lithium-Disilicate-Frameworks					
	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
Start temp. [°C]	500	500	500	500	500*	500	400	400	400	400	400*	400
Predrying	no	no	no	no	no	no	no	no	no	no	no	no
Predrying time [min]	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00
Closing time [min]	05:00	05:00	05:00	05:00	04:00	04:00	05:00	05:00	05:00	05:00	04:00	04:00
Homogenisation [°C]	500	500	500	500	500	500	400	400	400	400	400	400
Homogenisation [min]	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
Heat rate [°C/min]	75	60	60	60	60	60	50	50	50	50	60	50
Firing temp. [°C]	800	780	750	745	725	720	750	780	750	745	725	715
Holding time [min]	02:00	01:00	01:00	01:00	00:30–01:00	01:00	01:00	01:00	01:00	01:00	00:30–01:00	01:00
Temper [°C]	–	–	–	–	–	–	–	–	–	–	–	–
Temper [min]	–	–	–	–	–	–	–	–	–	–	–	–
Opening temp. [°C]	–	–	–	–	–	–	–	–	–	–	–	–
Opening time [min]	–	–	–	–	–	–	–	–	–	–	–	–
Vacuum	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	yes
Vacuum release	Heating	Heating	Heating	Heating	–	Heating	Heating	Heating	Heating	Heating	–	Heating
Vacuum End [°C]	800	780	750	745	–	720	750	780	750	745	–	715

*when using Stains and Glaze pastes, starting temperature 600°C!

IMPORTANT: The firing temperatures quoted here are guidelines only. Deviations may occur due to differences in furnace performance and may have to be compensated for if necessary.

Vacumat 6000 M														
For Zirconiumdioxide-Frameworks							For Lithium-Disilicate-Frameworks							
	Adhesive	Margin	HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM	Adhesive	Margin	HM	Dentine 1	Dentine 2	Glaze	Correction COR/LM
Standby temp. [°C]	500	500	500	500	500	500*	500	400	400	400	400	400	400*	400
Drying [min]	6	6	6	6	6	5	5	6	6	6	6	6	5	5
Heating period [min]	4.00	4.40	4.10	4.05	4.05	3.45	3.40	7.00	7.35	7.00	6.54	6.54	5.25	6.18
Heat rate [°C/min]	75	60	60	60	60	60	60	50	50	50	50	50	60	50
Final temp. [°C]	800	780	750	745	745	725	720	750	780	750	745	745	725	715
Holding time [min]	2	1	1	1	1	0.5-1	1	1	1	1	1	1	1	0.5-1
Vac. time [min]	4.00	4.40	4.10	4.05	4.05	–	3.40	7.00	7.35	7.00	6.54	6.54	–	6.18

NOTE: Firing recommendations for additional ceramic kilns are available on our website at kulzer.com/download

*when using Stains and Glaze pastes, starting temperature 600°C!

HeraCeram® Stains universal

The range of stains for universal applications

Stain Set, universal.

The Stains universal set includes 22 Stains (2 ml) and a Glaze paste (2 ml).

Contents

- 17 x 2 ml Individual Stains
- 3 x 2 ml Body Stain BS-A; BS-B; BS-C
- 2 x 2 ml Enamels EN Pearl; EN Opal
- 1 x 2 ml Glaze GL
- 1 x 2 ml Stain Liquid universal SLU
- 1 x Stain brush
- 1 x Glaze brush
- 1 x Shade guide
- Art. Code: 6605 2534
- In addition to the set, the Glaze is also available as a powder (20g).

Stain Set, universal, powder.

The Stains universal set includes 22 Stains (3g) and a Glaze (3g).

Contents

- 17 x 3 g Individual Stains
- 3 x 3 g Body Stain BS-A; BS-B; BS-C
- 2 x 3 g Enamels EN Pearl; EN Opal
- 1 x 3 g Glaze GL
- 1 x 3 g Stain Liquid universal SLU
- 1 x Stain brush
- 1 x Glaze brush
- 1 x Shade guide
- Art. Code: 6605 8216
- In addition to the set, the Glaze is also available as a powder (20g).



Contact in Germany

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