



K2 HF

Instruction for use



K2 HF Instruction

K2 HF is a high-fusing metal ceramic with excellent optical and physical properties. It is fired at 910°C and is suitable for almost all alloys with a CTE of 13.8 - 14.9 / 25° - 500°C. If the CTE is higher than 14.5, long-term cooling is recommended. Processing by professional dental technicians.

CE 0123

Indication

Veneering ceramic for dental alloys with a CTE of 13,8 – 14,9 / 25° - 500°C

Non – precious alloys

Precious alloys

Contraindication	
Bruxism	
Veneering of titanium- and	
zirconium frameworks	
Allergies to components of K2 HF	





K2 HF / Framework

The framework must be well prepared before handling!

Preparation:

- Use a tungsten carbide bur with a cross-cut for finishing and finally for grinding with a sintered diamond.

Important: Grind the framework in one direction only in order to avoid any overlapping in the metal. Overlapping in the metal may create bubbles in the ceramic.



Sandblasting:

Sandblast the work area using analuminium oxide, under pressure of 2 bar. Precious alloy: 110 μ m Non precious alloy: 250 μ m Then clean the framework with a steam cleaner. Do not handle or touch the framework with bare hands.

Always follow the alloy Manufacturer's technical data !

Oxidizing:

The framework is oxidized acording to the alloy manufacturer's instructions.

After oxidation, the surface of the framework must have a uniform colour. If spotting occurs, the framework must be grinded, sandblasted and cleaned, and if necessary the oxidation process must be repeated.

Oxidizing firing should follow the manufacturer's instruction for the alloy ! After the oxidizing with non precious metal-sandblast framework again!







K2 HF / Opaque Firing





Before Firing

After Firing

Bonder

- It is suggested to use the bonder for frameworks made with non precious alloy
- Mix the Bonder well and use a paste opaque brush to apply a thin covering layer
- After firing, the bonder must be a light brilliant yellow in shinning colour, depending on the composition of the Alloy.

Bonder can be diluted with glaze fluid!

1. (Wash opaque) and second Opaque firing

Mix the powder opaque with the corresponding liquid into a creamy Consistency. Apply it using a glass tip or a brush

Apply 70% covering for the first opaque layer.

The second opaque layer must cover 100%.

After firing, the opaque surface must appear shiny !



1. Before

Firing

2. Before Firing



1. After

Firing



Firing

Fix Firing Paste



The Fix Firing Paste is a ready-to-use paste for the fabrication of individual firing trays. With this refractory material, inlays, onlays, veneers, crowns and bridges can be securely positioned on pins or directly fixed to the firing tray.





After ceramic firing, simply lift restorations off the firing cotton die.

- easy to remove - no blasting or scratching out necessary



2. After

K2 HF base / 1. Dentine - Enamel firing





- After the opaque firing, apply the mixed Opaque Dentine fully on the coping
- It provides the colour stabilisation
- of deep inside of the tooth
- It covers the crown's border

(Cases of shoulder preparation, cover the cervical area through metal or second shoulder firing, see K2 HF advanced)

- Apply Dentine in reduced tooth shape or in complete anatomical tooth shape and then reduce
- Reduce the incisal more than the cervical area
- This leaves more space for Enamel
- On thin areas, Opaque Dentine can be applied instead of Dentine for a better covering





- The tooth shape can be completed with Enamel

- Model the palatinal shape with Dentine and Enamel
 Use Opaque dentine for the thin areas as it is a more effective cover
- areas as it is a more effective cover

Separate span bridges with several elements in order to avoid fissures. Separate till opaque befor firing.





After firing the surface must be shiny.





K2 HF base / 2. Dentine - Enamel firing



Finish and clean the crown before the correction firing. Finishing and grinding work can be reduced when the ceramic layer isn't over-contoured to mutch. Lightly structuring surfaces gives an Optical and vital tooth shape.





For the correction of the tooth shape:

Enamel = for little corrections and in Enamel areas.

Dentine or a mixture of Dentine and Enamel = for cervical and body areas



Too much Enamel makes the colour too light!



After firing the surface must be shiny.

K2 HF base / Glaze Firing

Colour characterisation will be highlighted when applying K2 Stains and fixed by means of a glaze firing.

A natural Glaze can be reached, especially in case of anterior restaurations when :

- finishing the natural structure of the surface with a diamond bur = a natural light reflection will be achieved

- gentle overworking and polishing the ceramic with a rubber wheel
- to target with DIA GLACE diamond polishing paste and DIA QUICK to achieve the desired individual glaze grade





Achieve the finishing before applying the glaze fluid, Stains and / or glaze porcelain

polish with glaze fluid without the glaze porcelain

After the glaze firing





ENN

Mix the icing mass well and homogeneously with the icing liquid. Mainly used in layering ceramics. Thinly mixed: low gloss Mixed thick: strong shine Glaze firing according to the ceramic manufacturer's firing table.

K2 HF advanced / First and second Shoulder Firing



porcelain



After first Firing

Seal the die with Clear Spacer or Die Hardener and than isolate the die.

Locate the correct tooth colour corresponding with the shoulder powder and mix it with the shoulder liquid. Apply the mixture on the desired area till the margin line.

Condense the mixture by vibrating the coping with a lecron.

Eliminate excess Liquid by patting dry with absorbent tissue paper.

Dry the applied shoulder powder at the opened furnace chamber or with a hair-dryer.





For the second firing, Once it has been fired, fill the gaps with shoulder porcelain.



after secod Firng

Apply shoulder porcelain economically, do not over-contour ! The less porcelain, the less shrinkage will Occur!





SH 1 - SH 4, SH 7 = light transparent and strong fluorescent

SH 5, SH 8 = opaque, suggested for non-precious metal as first layer to cover the metal border

SH 6 = for Bleaching - Colour conception, should it appear to white, it can be mixed with S1 - S4 or S7

K2 HF advanced / 1. Dentine- Enamel Firing



- place the clean coping on the model
- apply Opacious-dentine in the cervical areas

for a deeper colour effect





- Apply Dentine in the shape of the reduced tooth or in complete anatomical shape, then reduce the incisal more then the cervical area this leaves more space for Enamel

- Opacious-Dentine can be used instead of Dentine on thinner areas for a better covering of porcelain

for more vitality in tooth - Mamelon in K2 HF Mamelon can be applied





- construct the incisal area with Transpa
- approximal Enamel opal and Transpa opal
- finish the incisal ridge with Clear





- the Enamel completes the shape of the tooth





model the palatinal shape with Dentine and Enamel
for a better covering effect on thin areas Opacious-dentine can be applied



Separate span bridges with several elements in order to avoid fissures. Separate till opaque befor firing.

K2 HF advanced / 2. Dentine - Enamel firing (Correction firing)



Finish and clean the crown before the correction firing. Finishing and grinding work can be reduced when the ceramic layer isn`t over-contoured to mutch. Lightly structuring surfaces gives an Optical and vital tooth shape.

For the correction of the tooth shape:

- in the case of thin applications
 = Transpa
- in the case of thick layers
 = Mix Enamel with Transpa



Too much Transpa porcelain results a grey appearance! Too much Enamel makes the colour too light!

K2 HF advanced / Glaze firing

Colour characterisation will be highlighted when applying K2 Stains and fixed by means of a glaze firing.

- A natural Glaze can be reached, especially in case of anterior restaurations when :
- finishing the natural structure of the surface with a diamond bur = a natural light reflection will be achieved
- gentle overworking and polishing the ceramic with a rubber wheel
- to target with DIA GLACE diamond polishing paste and DIA QUICK to achieve the desired individual glaze grade



Achieve the finishing before applying the glaze fluid, Stains and / or Glaze powder





After the Glaze firing Polish with Glaze fluid without Glaze powder





Mix the icing mass well and homogeneously with the icing liquid. Mainly used in layering ceramics. Thinly mixed: low gloss Mixed thick: strong shine Glaze firing according to the ceramic manufacturer's firing table.

		K2 HF - Physical Properties		
middle CTE (25-500°)	Glass transition point	solubility	flexural strength	Median Particle Size
10 ⁻⁶ xK ⁻¹	°C	μm/cm²	MPa	D 90%
13,0	575 ± 10	15	85	60

K2 HF Enamel allocation table																	
Vita color	Bleach	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
dentin	Bleach	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
incisals	E-BL	E58	E58	E59	E59	E60	E57	E59	E59	E59	E60	E59	E59	E60	E60	E59	E59

Table of contents K2 HF																	
Farbe	Qty.	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	С3	C4	D2	D3	D4
Powder Opaque O-		A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
ArtNo. 386-20	20g	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Powder Opaque O-	20g							Bleach	BL Ar	tNr. 38	6-2021						
Shoulder		SH	-6 T	SH	-3 T	SH	-2 T	SH	-1 T	SH	-4 T	SH	-7 T	SH	-8 O	SH	-5 O
ArtNo. 386-22	20g	(01	(02	()3	()4	()5	(06	(08		0
Dentine D		A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C 1	C2	C3	C4	D2	D3	D4
ArtNo. 386-21	50g	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Bleach / Gingiva			BD-1			BD-	2		BD	-3		G-DR	(dark re	d)	G-SP	(soft pi	nk)
ArtNo. 386	20g											2617		2618			
	50g		2117			211	8		21	19							
Opaque Dentine OD-		A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
ArtNo. 386-26	50g	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Enamel			E-57			E-5	8		E-	59			E-60	0 E-BL (Bleach)			
ArtNo. 386-23	50g		01			0	2		()3			04			05	
Enamel intensive				E	IO-BL (c	pal blu	e)						EIO-OR	(orange	2)		
ArtNo. 386-24	50g				()1								02			
Transparent		TN ne	eutral	то	opal	T-BL	blue	T-WH	white	T-R	O light	t red	T-O	R orang	e	T-YE ye	low
ArtNo. 386-25	50g	()1	(02	()3	()4		05			06		08	
Mamelon			М	N-HO (I	HONEY)			Μ	M-OR (ORANG	iE)			MM-I	V (IVOR	Y)	
ArtNo. 386-25	20g		111213														
Clear	50g							CL	ArtNo	o. 386-2	500						
Glaze Uni	20g	GL ArtNo. 386-2630															
Bonder	5g							В	ArtNo	. 337-05	500						
K2 HF Liquid		O	baquer	Liquid	OL	Мо	delling	Liquid	ML	Sho	oulder	Liquid,	SHL	Glaze	Fluid /	GF-Uni	versal
	50ml	A				A	rtNo.	386-600	1	A	rtNo.	386-630)1	ŀ	rtNo.	386-620	1
	250ml	A				A	rtNo.	386-600	2								

Product overview Stains Universal												
Stain		ST-A	ST-B	ST-C	ST-D	ST-5 WHITE	ST-6 HONEY	ST-7 GREY	ST-8 BROWN	ST-9 BLUE	ST-10 PINK	ST-11 RED
ArtNo. 387-83	2g	01	02	03	04	05	06	07	08	09	10	11

Firing parameters K2 HF												
	starting temperature	dry	increase temperatur	vacuum	final temperature	hold time	result					
Oxid brand	Depending on the alloy manufacturer's instructions											
Penderbrand	Recommended for non precious metal ! When using bonder only 1 opaque firing is necessary!											
Bonderbrand	550°C / 1022°F	6 min	80°C (176°F) /min	+	980°C / 1796 °F	1min	sniny					
1. Opaque firing / powder*	590°C/ 1094°F	4 min	75°C (167°F) /min	+	950°C / 1742 °F	1min	shiny					
2. Opaque firing / powder	590°C/ 1094°F	4 min	75°C (167°F) /min	+	940°C / 1724°F	1min	Slightly shiny					
Shoulder firings	550°C/ 1022°F	4 min	80°C (176°F) /min	+	930°C / 1706 °F	1min	Slightly shiny					
Dentin firing	570°C/ 1058°F	6 min	50°C (122°F) /min	+	910°C / 1670 °F	1min	Slightly shiny					
Correction firing	570°C/ 1058°F	5 min	50°C (122°F) /min	+	900°C / 1652 °F	1min	Slightly shiny					
Glaze firing	590°C/ 1094°F	3 min	50°C (122°F) /min	-	895°C / 1643 °F	1min	shiny					
Glaze firing with glaze	500°C/ 932°F	3 min	45°C (113°F) /min	-	855°C / 1571 °F	1min	shiny					

* For non precious alloys final temperature 960°C Firing Parameters are Guidelines and need to be adjusted to the situation of the furnace ! The right firing result is important !

Changes and errors excepted!



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