CREATION WILLI GELLER INTERNATIONAL – SIMPLY BRILLIANT

WILLI GELLER Creation

INSTRUCTIONS FOR USE
CREATION CLASSIC METAL-CERAMICS

Willi Geller, Oral Design Zürich

CC

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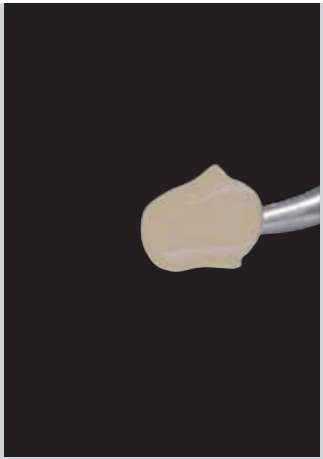
FRAME

Precious metals or non-precious metals with a CTE of 13,8 – 14,9 at 25° – 500° can be veneered with Creation CC.

CTE >14.5: Prolonged cooling
CTE <14.1: The object must be removed rapidly from the firing chamber

Oxidize according to the alloy manufacturer‘s instructions. Make sure the oxide layer is even.

CREA ALLOY BOND



The Crea Alloy Bonder firing takes place at **980 °C under vacuum**. Flood the firing chamber after the end temperature has been reached. The holding time is 1 minute. The predrying time of 6 minutes at 550 °C must be adhered to.

When the framework is sandblasted, apply the special Bonder Crea Alloy Bond in **a thin opaque consistency** and fire (see firing chart page 18).

This provides a bonding strength of approx. 70 MPa and thus a secure bond between ceramic and metal alloy. At the same time it acts as **a buffer zone between metal and ceramic**. Metal oxides of the alloys are bound in the bonder, producing a golden-yellowish surface appearance. This creates the background for high colour stability.

The appearance of the bonder may differ, depending on the alloy.

1. OPAQUE FIRING

Apply Creation CC Creapast or Creation CC powder opaque in even brush strokes using the Creapast brush provided onto the metallic framework with approx. 75 % covering power. It is important to ensure that the **brush is only slightly moistened**.

The first firing takes place at **980 °C (for non-precious metal: 1000°C; with Crea Alloy Bond: 980 °C)** under vacuum.
Flood the firing chamber after the end temperature has been reached.

Holding time: 1 minute
Predrying time: 6 minutes at 550 °C

2. OPAQUE FIRING

The second opaque firing is **opaquely applied**. If required, the opaque build-up can be modified with Intensive Opaque porcelains (opaque powder can also be used for the second opaque build-up).
The second opaque firing takes place at **950 °C under vacuum**. Flood the firing chamber again after the end temperature has been reached. The holding time is 1 minute. The second opaque firing should produce an eggshell shining.

Technical advice:

- **Only use Creapast brush slightly moistened.**
- **Avoid any dilution with water.**
- **The consistency of Creapast can be modified slightly with Universal Fluid (UF) from the kit.**
- **Avoid drying too quickly before or inside the firing chamber (boiling bubbles!).**
- **Once squeezed out, material must not be drawn back into the syringe.**
- **The predrying time of 6 minutes at 550°C must be adhered to.**

1. SHOULDER FIRING

View of the fired shoulder (silky finish).

Isolate the very thinly sealed die in the shoulder area **with Creapen**. Place the coping, not too tightly fitting, onto the die.

Application of the Opaque Shoulder Porcelain (depending on the tooth shade selected: SP27-29) in the framework/shoulder transition area to stabilise the brightness value in the cervical area. Use the Shoulder Porcelain selected for the tooth shade (SP21-26) to cover the shoulder as far as the preparation border. After gently drying with a hairdryer or in the open firing chamber, the cap can easily be lifted off the die.

The first shoulder firing takes place at 950°C under vacuum.

Holding time: 1 min.
Predrying time: 2 min. at 600°C

2. SHOULDER FIRING

Repeated **isolation with Creapen**. Supplement the ceramic that has shrunk as a result of firing, using the Shoulder Porcelain selected for the tooth shade (SP21-26).

The second shoulder firing takes place at 950°C under vacuum.

Holding time: 1 minute
Predrying time: 2 minutes at 600°C

SHADE COMBINATION CHART SHOULDER POWDERS

Shade	Shoulder Porcelain Opaque (SP27-29)	Shoulder Porcelain (SP21-26)	Mixing Ratio (SP21-26)
A1	27	21 & 22	1:3
A2	28	22	100 %
A3	28	23 & 25	2:1
A3,5	29	24 & 25	1:1
A4	29	24 & 25	2:1
B1	27	21 & 22	4:1
B2	28	21 & 22	2:1
B3	28	23	100 %
B4	28	24 & 23	3:1
C1	27	22 & 26	1:1
C2	28	22 & 26	1:2
C3	28	26 & 25	3:1
C4	28	26 & 25	4:1
D2	28	22 & 25	4:1
D3	28	22 & 25 & 26	3:2:1
D4	28	22 & 25	3:1

DENTINE BUILD-UP

Opaque Dentine Intensive: OD32,37,41,43 and 44. Use of OD43 in the middle coronal area to determine the brilliance value.
Opaque Dentine Tooth Shades (A1-D4) conceals the finely tapered marginal areas of the crown and interproximally prevents too many shadows entering into the build-up. It also vitrifies rather more strongly and is hence more homogeneous from the point of view of periodontal hygiene. This is also very important basally in the pontic and additionally helps colour stabilisation in the cervical third.

Build up the labial anatomical shape of the crown with Dentine porcelain. Once the anatomical shape is correctly remodelled, reduce the **dentine build-up incisally and interdentally** to create space for further layering - while leaving the mamelon shape implied in dentine. Irregularities are rather advantageous here.

Technical advice:

- **It is imperative to keep applied build-up damp - avoid excessive drying out.**
- **Do not rewet dried-out materials with modelling fluid.**
- **Only use distilled water.**

INCISAL BUILD-UP

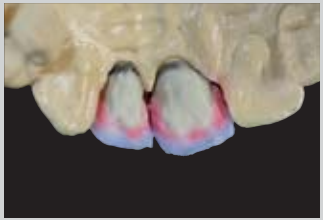
Individually supplement the dentine build-up incisally in its vertical direction, using incisal and transparent porcelains. Start by building up the distal or mesial corners with pure incisal porcelain.

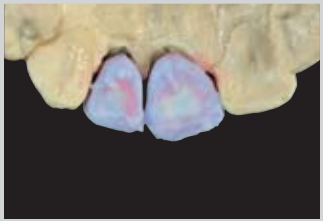
The middle incisal area is supplemented alternately with Incisal (E58 – E60), Opal Incisal (SI1 – SI6), Pearl Incisal (PS0 – PS3), Opal Transparent (NT, OT), CLO, UC or TI porcelains (TI1 – TI5). On the labial surface in the incisal third the iridescent **Creation CC Make In porcelains should be washed into the wet material, depending on the characteristic features required**, in order to recreate life-like mamelons.

Mask the labial surface with Incisal (E58-60), Opal Incisal (SI1 – SI6), Pearl Incisal (PS0 – PS3), Opal Transparent, (NT, OT), CLO, UC or TI porcelains (TI1 – TI5) depending on the desired effect. Application of TI1 to the side edge of the crown in order support the bluish opalescent, transparent effect.

The hallow effect is achieved with an Incisal/Dentine mixture.

INCISAL BUILD-UP





To allow for firing contraction, over-contour the **build-up labially and incisally**. After lifting off the model, supplement the contact points with the appropriate Opaque Dentine, Dentine, Approximal Dentine and Incisal porcelains. Separate the interdental spaces with a sharp instrument (razor-blade, thin scalpel, etc.). The palatal surface that is still uncovered allows the labial surface to be checked in relation to the framework substructure in each working phase.

The palatal surface is usually covered with a darker OD (e.g. OD41) or with an OD mixture modified using Creation CC In Nova tapering thinly to the incisal edge. Build up the tubercle area and the substructure of the marginal ridges with Dentine. Dark and discoloured areas in the palatal fossa can be provided with a **mixture of Dentine and In Nova** porcelains (= all purpose modifier).

Then complete the palatal surface with Incisal, Transparent and Cervical Transparent porcelain. In the cervical interproximal area a triangle is taken out, filled with **Opaque Dentine (OD32) or Approximal Dentine (AD1, AD2)**, then covered with the desired dentine shade. As a result, increased light and colour stability is achieved.

DENTINE FIRING

The dentine firing takes place at **920 °C under vacuum** (see firing chart p.18).

Flood the firing chamber after the end temperature has been reached. **The holding time is 1 minute**. Reliable proof of a correct firing cycle can only be produced by visual checking after the firing.

If the appearance is as in the illustration, the firing cycle was perfect (**slightly shiny**).

CORRECTION FIRING

Before the correction firing, finish and clean the crowns. The second form firing is a pure correction firing. This involves making only small corrections of shape with Incisal, Transparent and Cervical Transparent porcelains.

Firing takes place at **910 °C under vacuum** (see firing chart p.18). Flood the firing chamber again after the end temperature has been reached. Holding time: 1 minute. If the firing cycle is correct, the ceramic will again **appear slightly shiny**. Usually only minor corrections of shape are necessary.

However, the **natural structuring of the crown surface is also important**. The aim is aesthetic harmony with the adjacent teeth, which can be achieved with the usual diamond points, stones and tungsten-carbide tips.

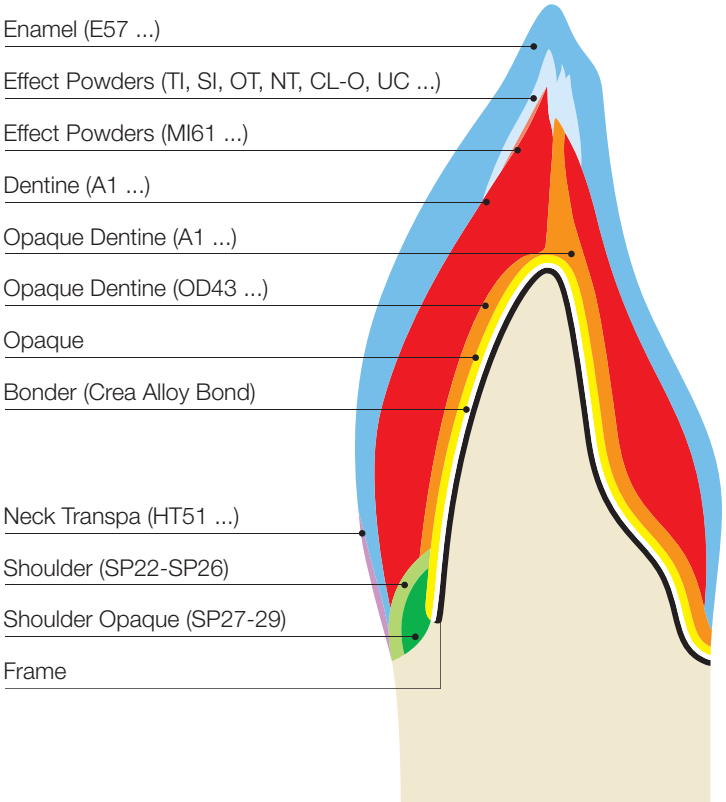
GLAZE FIRING

Discolorations on the tooth surface can be mimicked in a life-like way with **Creation CC.AV. Make Up** (marking and glazing) or **Creation CC.LF. Make Up Instant** (glazing and fluorescent).

The surface of the glazed crown is mechanical finished. Depending on the degree of shine of the texture, adapt the surface to the situation in the mouth using rubber polishers, emery, felt wheel, pumice powder and polishing tools.

The Creation porcelains are characterised by the correct amount of fluorescence, which always allows a natural, harmonious transition to the rest of the dentition, even under extreme lighting conditions.

CREATION CC BUILD-UP DIAGRAMME



COLOUR CHART

Vita® Shade		A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Creapast	16	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Creapast Modifier	5	white				violet				ochre				yellow gold			gingival
Creapast WOP	3	sand							sahara							gold	
Powder Opaque	16	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Fill Opaque	1	FOP															
Powder Opaque Modifier	8	OM-11 white		OM-12 pink		OM-13 lilac		OM-14 grey		OM-15-sahara		OM-16 ochre		OM-17 brown		OM-G gingival	
Opaque Dentine	16	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Opaque Dentine	5	OD-32 havanna			OD-37 curry			OD-41 orange			OD-43 ivory				OD-44 cuba		
Dentine	16	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Enamel	4	E58	E58	E59	E59	E60	E57	E59	E59	E59	E60	E59	E59	E60	E60	E59	E59
Clear	2	CL-0								Window UC							
Transpa	7	NT neutral		OT opal		TI-1 blue		TI-2 white		TI-3 pink		TI-4 yellow		TI-5 grey			
Effect Enamel	8	SI-01 light yellow		SI-02 medium yellow		SI-03 heavy yellow		SI-04 light orange		SI-04 medium orange		SI-06 heavy orange		SO-10 blue		SO-11 orange	
Pearl Enamel	4	PS-0 white				PS-1 blue/white				PS-2 flamingo				PS-3 orange			
Neck Transpa	5	HT-51 iridescent			HT-52 khaki			HT-53 sand			HT-54 honey				HT-55 bordeaux		
Shoulder Powders	10	SP-21 neutral		SP-22 flamingo		SP-23 sand		SP-24 gold		SP-25 red brown		SP-26 yellow gold		SP-27 ivory		SP-28 opa-que yellow	
Make In	6	MI-61 ivory			MI-62 lemon			MI-63 honey yellow			MI-64 flamingo			MI-65 gold			MI-66 olive
Approximal Dentine	2	AD-1 light yellow								AD-2 orange							
Gingival	8	G1 purple		G2 dark pink		G3 light pink		G4 flamingo		G5 rose		G6-dark pink opaque		G 7 violet		GN neutral	
Glaze	1	Glaze-GL															
Correction Powder	1	Correction Powder-KM															
Bleach Opaque	1	0-AB															
Bleach Dentine	3	BD-A						BD-B						BD-B0			
Bleach Enamel	1	S-AB															
Bleach Shoulder	1	SP-AB															

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FIRING CHART

	Preheating Temp.	Drying Time	Raise of Temp.	V	Final Temp.	Holding Time	Appearance
Oxid Firing	According to alloy manufacturer's instructions						
Crea Alloy Bond	550 °C	6 min.	80 °C/min.	+	980 °C	1 min.	Yellowish, slightly shining **
1st Opaquer Firing							
- WOP Opaker	550 °C	6 min.	80 °C/min.	+	950 °C	1 min.	Slightly shining
- Creapast *	550 °C	6 min.	80 °C/min.	+	980 °C	1 min.	
- Opaque Powder *	600 °C	2 min.	80 °C/min.	+	980 °C	1 min.	
2nd Opaker Firing							
- Creapast	550 °C	6 min.	80 °C/min.	+	950 °C	1 min.	Eggshell finish
- Opaque Powder	600 °C	2 min.	80 °C/min.	+	950 °C	1 min.	
1st and 1st Shoulder Firing	600 °C	2 min.	80 °C/min.	+	950 °C	1 min.	Slightly shining
Dentine Firing	580 °C	6 min.	55 °C/min.	+	920 °C	1 min.	
2nd Dentine Firing	580 °C	4 min.	55 °C/min.	+	910 °C	1 min.	
Glaze Firing	600 °C	2 min.	55 °C/min.	-	930 °C	-	Shining
Glaze Firing with Glaze Powder CC	600 °C	2 min.	55 °C/min.	-	900 °C	1 min.	
Glaze- and Shade Firing (Creation CC Make Up Instant)	480 °C	2 min.	45 °C/min.	-	850 °C	1 min.	
Correction Powder Firing	450 °C	6 min.	45 °C/min.	+	770 °C	1 min.	

* When using non-precious alloys: final temperature 1.000°C.
** The appearance of the bonder can differ, depending on the alloy composition.
The firing parameters given above are guidelines, which must always be adjusted to suit the furnace used and the situation of the furnace.
What is essential is getting the right firing result.

PHYSICAL PROPERTIES

Properties	Measure	Value	Norm
Dentine Firing	°C	920	
Coefficient of Thermal Expansion (25° – 500°C)	10^{-6} xK^{-1}	13,3 ± 0,3	
Glass Transition Temperature	°C	580 ± 10	
Solubility	µg/cm^2	16	max. 100
Density	g/cm^3	2,52	
Flexural strength	MPa (Nmm^2)	84	min. 50
Median Grain Size	D 90%	60	

All tested materials conform to standard EN ISO 9693:2000.
The technical and physical values given relate to samples produced in-house and the measuring instruments located there.

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