

CREATION WILLI GELLER INTERNATIONAL - SIMPLY BRILLIANT

WILLI GELLER  
*Creation*

INSTRUCTIONS FOR USE  
CREATION LOW FUSING METAL-CERAMICS

LF



Willi Geller, Oral Design Zürich

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## Imprint

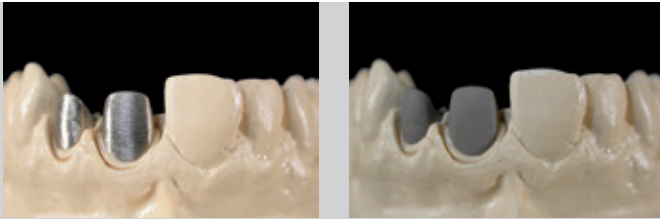
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## FRAME



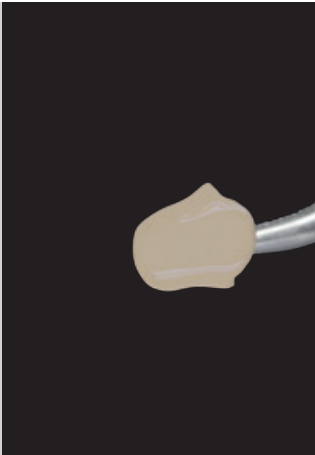
Precious alloys or non-precious alloys with a CTE of 13,8 – 14,9 at 25° – 500°C can be veneered with Creation LF.

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



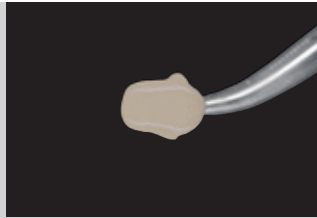
The Crea Alloy Bonder firing takes place at **980°C under vacuum**. Flood the firing chamber after the end temperature has been reached. The holding time is 1 minute. The predrying time of 6 minutes at 550°C must be adhered to.

When the framework is sandblasted, apply the special Bonder Crea Alloy Bond in **a thin opaque consistency** and fire (see firing chart page 17).

This provides a bonding strength of approx. 70MPa 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 bond, 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 LF 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 **830 °C (for non-precious alloy: 850 °C; with Crea Alloy Bond: 830 °C)** under vacuum. Flood the firing chamber after the end temperature has been reached.

Holding time: 1 minute

Predrying time: 4 minutes at 450 °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 **820°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**.

The predrying time of 4 minutes at 450°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 (SP28) in the framework/shoulder transition area to stabilise the brightness value in the cervical area. Use the Shoulder Porcelain selected for the tooth shade (SP22-25) 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 810 °C under vacuum.**

Holding time: 1 min.

Predrying time: 4 min. at 450 °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 (SP22-25).

**The second shoulder firing takes place at 810°C under vacuum.**

Holding time: 1 minute

Predrying time: 4 minutes at 450°C



## 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** 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.



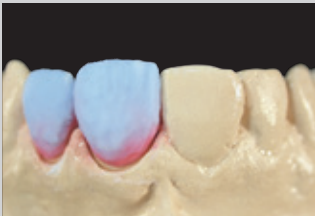
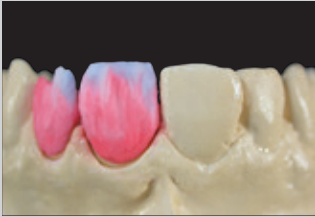
Build-up the labial anatomical shape of the crown with Dentine porcelain. Once the anatomical shape is correctly remodelled, reduce the **dentine build-up incisally and interdentially** to create space for further layering - while leaving the mamelon shape implied in dentine. Irregularities are rather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



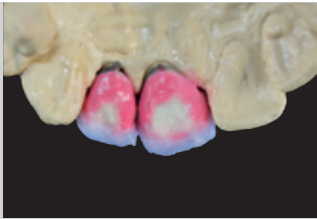
Individually supplement the dentine build-up incisally in its vertical direction, using incisal and transparent porcelains. Start by building up the distal or mesial corners with pure incisal porcelain.

**The middle incisal area** is supplemented alternately with Incisal (E58-60), Opal Incisal (SI-02, SI-04, SI-06), Pearl Incisal (PS0, PS3), Opal Transparent (NT, OT), CLO, UC or TI porcelains. On the labial surface in the incisal third the iridescent **Creation LF Make In porcelains should be washed into the wet material, depending on the characteristic features required**, in order to recreate life-like mamelons.

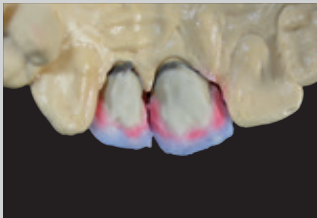
Mask the labial surface with Incisal (E58-60), Opal Incisal (SI-02, SI-04, SI-06), Pearl Incisal (PS0, PS3), Opal Transparent, (NT, OT), CLO, UC or TI porcelains depending on the desired effect. Application of TI1 to the side edge of the crown in order support the bluish opalescent, transparent effect.

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

## INCISAL BUILD-UP

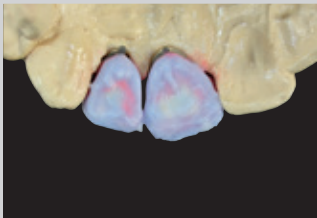


To allow for firing contraction, over-contour the **build-up labially and incisally**. After lifting off the model, supplement the contact points with the appropriate Opaque Dentine, Dentine, Approximal Dentine and Incisal porcelains. Separate the interdental spaces with a sharp instrument (razor-blade, 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) tapering thinly to the incisal edge. Build-up the tubercle area and the substructure of the marginal ridges with Dentine.

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 **770°C under vacuum** (see firing chart p.17).

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 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 **760 °C under vacuum** (see firing chart p.17). 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.

Creation LF can also be used as a corrective or repair porcelain for Creation CC.

## GLAZE FIRING

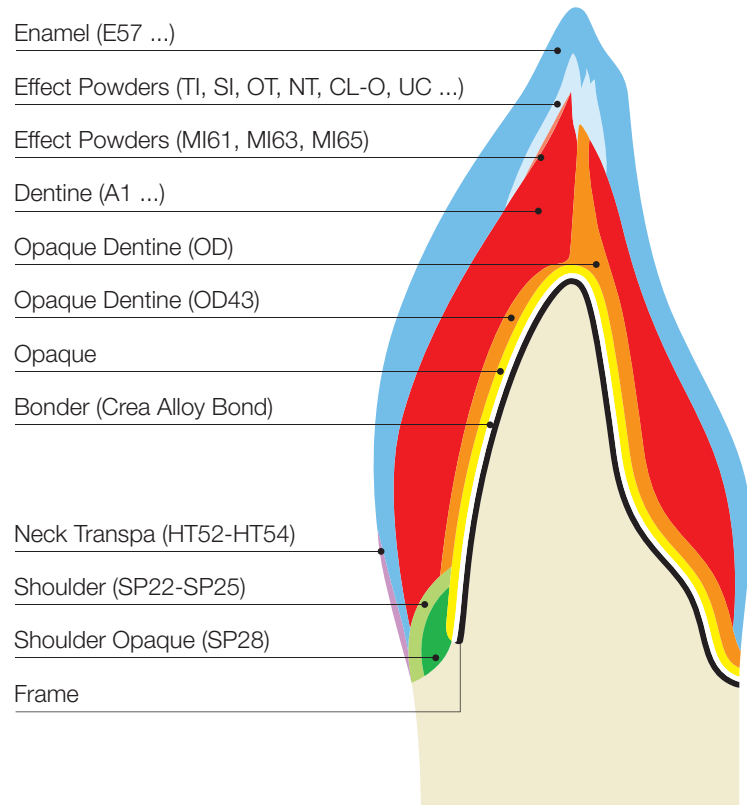


Discolorations on the tooth surface can be mimicked in a life-like way with **Creation CC.LF. Make Up Instant** (glazing and fluorescent).

The surface of the furnace-shone crown is finished by machine. 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 LF BUILD-UP DIAGRAMME



## COLOUR CHART

Vita® Shade		A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Powder Opaque	16	A1	A2	A3	A3,5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Powder Opaque Modifier	4	OM-12 pink				OM-13 lilac				OM-16 ochre				OM-17 brown			
Opaque Dentine Modifier	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	6	NT neutral		OT opal		TI-1 blue			TI-3 pink		TI-4 yellow		TI-5 grey				
Effect Enamel	7	PS-0 white		PS-3 orange		SI-02 medium yellow		SI-04 light orange		SI-06 heavy orange		SO-10 blue		SO-11 orange			
Neck Transpa	3	HT-52 khaki					HT-53 sand					HT-54 honey					
Shoulder Powders	6	SP-22 flamingo		SP-23 sand		SP-24 gold		SP-25 red brown		SP-26 yellow gold		SP-28 opaque yellow					
Make In	3	MI-61 ivory					MI-63 honey yellow					MI-65 gold					
Approximal Dentine	2	AD-1 light yellow								AD-2 orange							
Gingival	1	G-2- dark pink															
Glaze	1	Glaze-GL															
Crea Alloy Bond	1	Crea Alloy Bond															
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**
1. Opaque Firing - Powder Opaque*	450 °C	4 min.	55 °C/min.	+	830 °C	1 min.	Shining
2. Opaque Firing - Powder Opaque	450 °C	4 min.	55 °C/min.	+	820 °C	1 min.	Slightly shining
1 <sup>st</sup> and 2 <sup>nd</sup> Shoulder Firing	450 °C	4 min.	45 °C/min.	+	810 °C	1 min.	
Dentine Firing	450 °C	6 min.	45 °C/min.	+	770 °C	1 min.	
Correction Firing	450 °C	6 min.	45 °C/min.	+	760 °C	1 min.	Shining
Glaze Firing	480 °C	2 min.	45 °C/min.	-	780 °C	-	
Glaze and Shade Firing (Creation LF Make Up Instant)	480 °C	2 min.	45 °C/min.	-	750 °C	1 min.	

\* When using non-precious alloys: final temperature 850 °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	770	
Coefficient of Thermal Expansion (25° – 500 °C)	$10^{-6} \text{ xK}^{-1}$	11,4 ± 0,3	
Glass Transition Temperature	°C	510 ± 10	
Solubility	$\mu\text{g}/\text{cm}^2$	16	max. 100
Density	$\text{g}/\text{cm}^3$	2,48	
Flexural strength	MPa (Nmm <sup>2</sup> )	80	min. 50
Main Grain Size	D 90%	60	

The technical and physical values given relate to samples produced in-house and the measuring instruments located there.





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