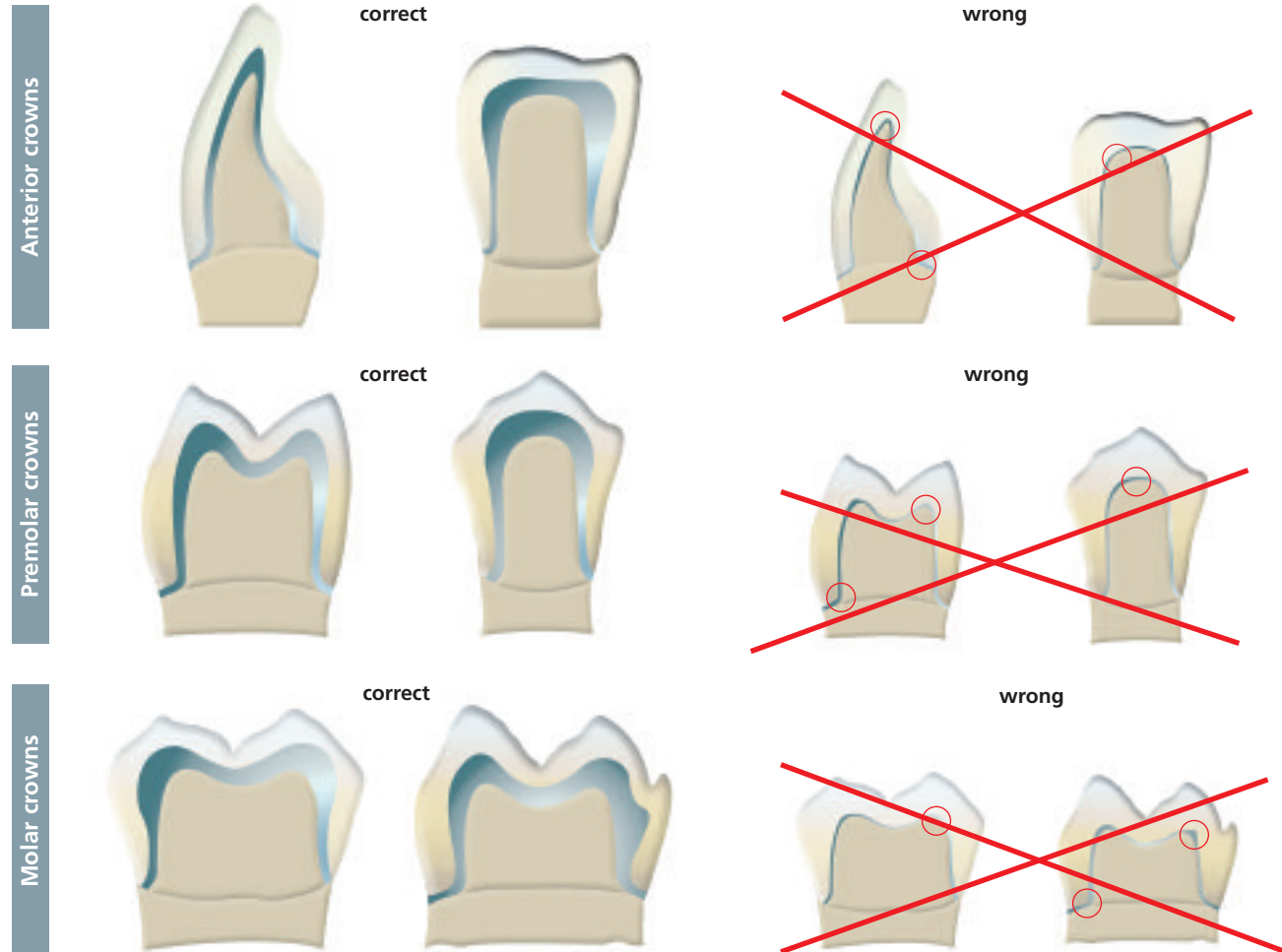
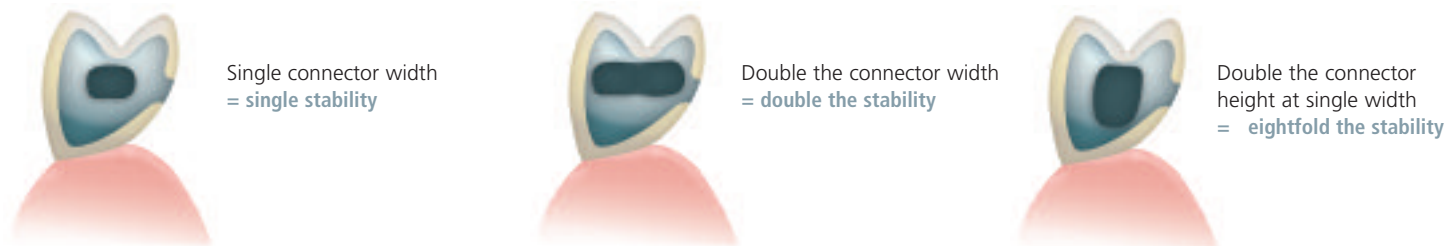


FRAMEWORK DESIGN

Functional support of the veneering ceramic



Framework stability



Framework design for bridges



ALLOYS

Alloy	IPS InLine	IPS InLine PoM	Colour	CTE 25-500 °C
High gold content				
Brite Gold	✓*	–	rich yellow	14.8
Brite Gold XH	✓*	–	rich yellow	14.4
Golden Ceramic	✓*	–	rich yellow	14.6
Aquarius Hard	✓*	✓ ²⁾	rich yellow	14.5
Aquarius	✓*	–	rich yellow	14.6
IPS d.SIGN 98	✓*	✓ ¹⁾	rich yellow	14.3
Y	✓	–	yellow	14.6
Aquarius XH	✓	–	yellow	14.1
Y-2	✓*	–	yellow	15.0
Y-Lite	✓	✓	white	13.9
Sagittarius	✓	✓	yellow	14.0
Y-1	✓*	–	yellow	14.8
IPS d.SIGN 96	✓	✓	yellow	14.3
Reduced gold content				
IPS d.SIGN 91	✓	✓	white	14.2
W	✓	–	white	14.2
W-5	✓	–	white	14.0
Lodestar	✓	✓	white	14.1
W-3	✓	✓	white	13.9
Leo	✓	✓	white	13.9
W-2	✓	✓	white	14.2
Evolution Lite	✓	✓	white	14.2
Palladium-based				
Capricorn 15	✓	–	white	14.3
IPS d.SIGN 84	✓	✓ ²⁾	white	13.8
Capricorn	✓	✓	white	14.1
Protocol	✓	✓ ²⁾	white	13.8
IPS d.SIGN 67	✓	–	white	13.9
Spartan Plus	✓	✓	white	14.3
Spartan	✓	✓	white	14.2
Aries	✓	–	white	14.7
IPS d.SIGN 59	✓*	–	white	14.5
IPS d.SIGN 53	✓**	–	white	14.8
W-1	✓*	–	white	15.2
Callisto CP	✓	✓	white	14.2
Implant Alloys				
Callisto Implant 78	✓	✓	white	13.9
IS-85	✓	✓	white	13.9
IS-64	✓**	–	white	14.8
Callisto Implant 60	✓*	–	white	14.5
Base metal				
Lite-Cast	✓	✓	white	13.9
Pisces Plus	✓	✓	white	14.1
4all	✓	✓ ²⁾	white	13.8
IPS d.SIGN 15	✓	✓	white	13.9
IPS d.SIGN 30	✓**	✓ ²⁾	white	14.5

* cool to 800 °C
** cool to 700 °C
1) Single restorations
2) See «Important» IPS InLine PoM

The range of alloys may vary from country to country.

Fabricating the framework



Finishing the framework with tungsten carbide metal burs or ceramic-bonded grinding instruments.

Finished framework prior to oxidation.

Oxide firing



Compatibility with alloys

IPS InLine – Conventional Metal-Ceramic is suitable for alloys with a CTE of approx. 13.8 to $15.0 \times 10^{-6} \text{ K}^{-1}$ at $25-500 \text{ °C}$. If the recommendations regarding scallop-type framework design are observed, and ceramic layers do not exceed 1.5 mm , these alloys may be processed in the Programat® furnaces using standard cooling.

IPS InLine PoM – Press-on-Metal Ceramic

is suitable to be pressed on alloys with a CTE of 13.8 to $14.5 \times 10^{-6} \text{ K}^{-1}$ at $25-500 \text{ °C}$ and up to max. 10% silver.

Important

- If these minimum requirements cannot be observed, cooling to $*800 \text{ °C}$, or $**700 \text{ °C}$ (depending on the alloy type), is required in conjunction with all main firings and glaze firings.
- In the case of ceramic layers thicker than 1.5 mm up to max. 2.5 mm , as well as extensive reconstructions (e.g. implant-borne restorations) in combination with high gold alloys and predominantly base alloys, cooling to $*800 \text{ °C}$, or $**700 \text{ °C}$, is required. This also applies to soldered restorations.

Important

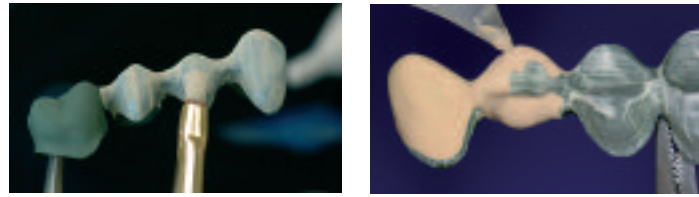
IPS InLine PoM

- In conjunction with alloys in the CTE range of below 13.8 ($\times 10^{-6} \text{ K}^{-1}$ at $25-500 \text{ °C}$) and above 14.5 ($\times 10^{-6} \text{ K}^{-1}$ at $25-500 \text{ °C}$), no ceramic shoulders should be applied. For this framework design (ceramic shoulder) or if non-metal supported areas are present, the cooling and tension conditions are critical. If ceramic shoulders are applied, alloys in the CTE range of approx. $14.0-14.3$ ($\times 10^{-6} \text{ K}^{-1}$ at $25-500 \text{ °C}$) should be used.
- In the case of single restorations, in particular if ceramic shoulders are present, the 200-g investment ring should be exclusively used, as it ensures optimum expansion values as well as ideal cooling and tension conditions.

IPS InLine® – Conventional Metal-Ceramic

PROCESSING

1st and 2nd opaquer firing

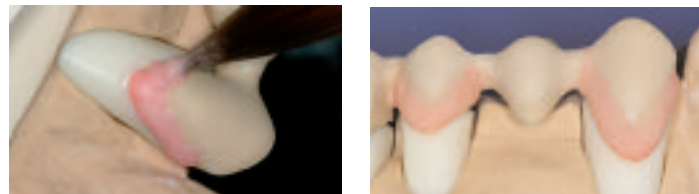


Extrude the desired amount of the ready-to-use opaquer paste from the syringe and mix thoroughly. Apply the first opaquer layer (wash) thinly using a brush and fire. Apply the second opaquer layer in such a way that the metal framework is entirely covered with opaquer.

Firing parameters for the 1st and 2nd opaquer firing

T	B	S	t ↗	H	V ₁	V ₂
930°C 1706°F	403°C 757°F	6 min. 6 min.	100°C 180°F	2 min. 2 min.	450°C 842°F	929°C 1704°F

1st and 2nd Margin firing

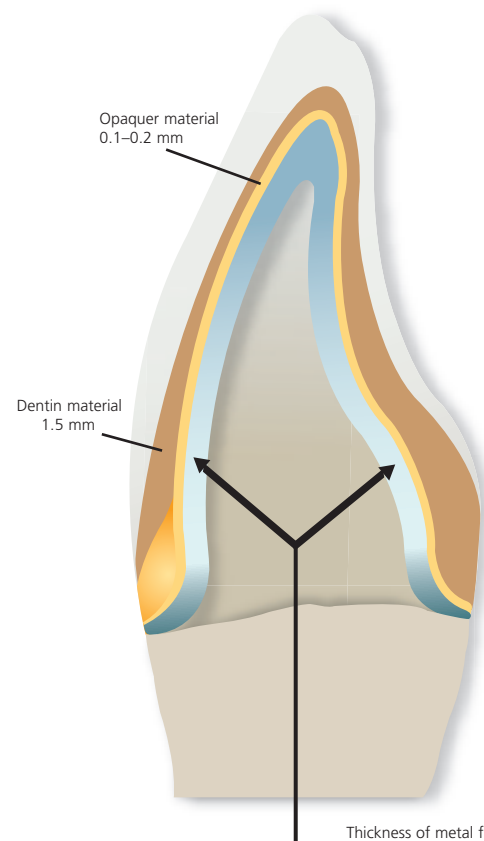


First, isolate the stone die with IPS Margin Sealer and then, after drying, with IPS Ceramic Separating Liquid. After that, generously apply the IPS InLine Margin material in the cervical area in the shape of a drop and fire. After that, complete the ceramic shoulder and fire.

Firing parameters for the 1st and 2nd Margin firing

T	B	S	t ↗	H	V ₁	V ₂
930°C 1706°F	403°C 757°F	4 min. 4 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	929°C 1704°F

Layering diagram

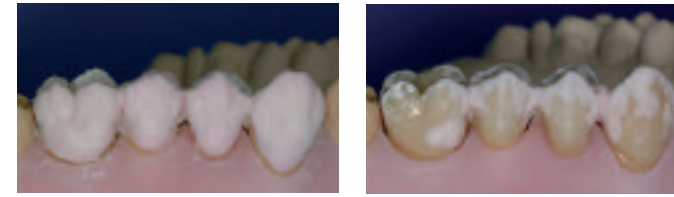


Thickness of metal framework:
– Crowns min. 0.3 mm
– Bridge abutments min. 0.5 mm

	Ideal space	Limited space
Framework	0.3-0.5 mm	0.3-0.5 mm
Opaquer	0.1 mm	0.1 mm
Deep Dentin		
cervical	–	0.3 mm
incisal	–	0.1 mm
Dentin		
cervical	1 mm	0.5 mm
incisal	0.7 mm	0.3 mm
Incisal		
cervical	0.2 mm	0.1 mm
incisal	0.5 mm	0.4 mm

These figures are drawn from past experience and they may vary in certain situations.

1st and 2nd dentin, deep dentin and incisal firing



Layering the corresponding dentin, deep dentin, and incisal materials. For optimum firing, the interdental area must be separated up to the opaquer before firing.

Firing parameters for the 1st dentin and incisal firing

T	B	S	t ↗	H	V ₁	V ₂
910°C 1670°F	403°C 757°F	4 min. 4 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	909°C 1668°F

Firing parameters for the 2nd dentin and incisal firing

T	B	S	t ↗	H	V ₁	V ₂
900°C 1652°F	403°C 757°F	4 min. 4 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	899°C 1650°F

Firing parameters Margin Add-On

T	B	S	t ↗	H	V ₁	V ₂
900°C 1652°F	403°C 757°F	4 min. 4 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	899°C 1650°F

Subsequent adjustments

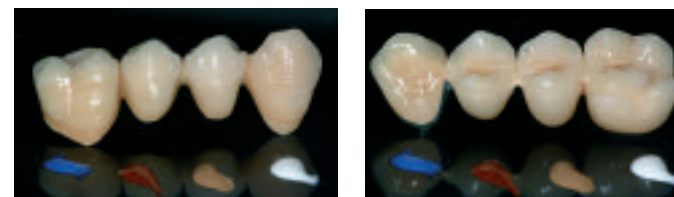


After the completion of a restoration, small adjustments, such as contact points, pontic rests, shoulder adjustments, may be necessary. IPS InLine Dentin/Incisal powder can be mixed with IPS InLine Add-On in a 1:1 ratio and subsequently applied.

Firing parameters for IPS InLine Add-On 1:1

T	B	S	t ↗	H	V ₁	V ₂
860°C 1580°F	403°C 757°F	4 min. 4 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	859°C 1578°F

Stain and characterization firing (Shade, Stains, Glaze)



The restoration is provided with a true-to-nature surface texture, such as growth lines and convex/concave areas. Dentin shade adjustments can be applied with the IPS InLine/IPS InLine PoM Shades and/or individual characterizations be created by using the IPS InLine/IPS InLine PoM Stains. Next, the materials can be glazed.

Firing parameters for IPS InLine/IPS InLine PoM Shade, Stains

T	B	S	t ↗	H	V ₁	V ₂
800°C 1472°F	403°C 757°F	6 min. 6 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	799°C 1470°F

NEW

Firing parameters for IPS InLine/IPS InLine PoM Glaze

T	B	S	t ↗	H	V ₁	V ₂
800°C 1472°F	403°C 757°F	6 min. 6 min.	60°C 108°F	2 min. 2 min.	450°C 842°F	799°C 1470°F

NEW

Add-On after Glaze firing



Mix IPS InLine/IPS InLine PoM Add-On 690 °C/1274 °F (alone) with the desired modelling liquid, apply the material in the missing areas, and fire.

Firing parameters for IPS InLine/IPS InLine PoM 690°C/1274°F

T	B	S	t	H	V ₁	V ₂
690°C 1274°F	403°C 757°F	4 min. 4 min.	60°C 108°F	1 min. 1 min.	450°C 842°F	689°C 1272°F

NEW