Dental technical instructions for use on zirconium oxide framework

Zirconium oxide has different thermal characteristics to titanium. For this reason, in order to achieve optimal firing results of Triceram® on zirconium oxide, the firing temperature must be raised and the holding time lengthened.

The same basic prerequisites for metal alloy framework, also apply for zirconium oxide. It is essential that the size of the framework is a smaller version of the final anatomical shape desired. A successful restoration relies on an even thickness of bonding ceramics. Please note the firing recommendations in the table below.

1. Preparing the framework

Prepare the framework according to the manufacturer's directions for use.

2. Applying the Triceram® liner

Apply the liner according to the selected tooth shade (see colour-combination table) and mix with universal liquid B.O.L., Order No. 299-180-40, to a creamy consistency. For the first bake, apply the liner thinly to the framework. For the second liner bake, the liner is also appliedin a thin even layer, taking care to cover the entire surface. After the second bake, the liner has a silky, shiny appearance

Colour-combination table

tooth shade	L 1	L 2	L 3	L 4	L 5	L 6
A1	1/3				2/3	
A2	2/3				1/3	
A3	1					
A3,5	3/4					1/4
A4	1/2					1/2
B1		1/3			2/3	
B2		2/3			1/3	
B3		3/4			1/4	
B4		1				
C1			1/3		2/3	
C2			2/3		1/3	
C3			3/4		1/4	
C4			1			
D2				2/3	1/3	
D3				3/4	1/4	
D4		1/3		2/3		

3. Ceramic build-up

(see page 18 of Triceram® Instructions for Use)

Please note that all firing temperatures must be increased by 5°C - 10°C compared to the firing recommendations for titanium, (see firing table below).

The holding time for the dentin bakes must be prolonged by 1.5 – 2 minutes.

Different furnaces may require individual variations in temperature.

Tips for furnace control see page 9 Triceram® Instructions for Use.

Recommended firing temperatures for zirconium oxide framework

	Base temperature	Drying time	Heat rate	Vacuum start	Vacuum end	Final temperature	Holding time	Cooling time
Liner 1+2 bake	500 °C 932 °F	4 min	65 °C/min. 149 °F/min.	500 °C 932 °F	800 °C 1472 °F	800 °C 1472 °F	1 min. under vacuum	0 min.
Shoulder bake	500 °C 932 °F	6 min	55 °C/min. 131 °F/min.	500 °C 932 °F	790 °C 1454 °F	790 °C 1454 °F	1 min. under vacuum	0 min.
1. Dentin bake	500 °C 932 °F	6 min	55 °C/min. 131 °F/min.	500 °C 932 °F	760 °C 1400 °F	760 °C 1400 °F	1,5 - 2 min. under vacuum	0 min.
2. Dentin bake	500 °C 932 °F	4 min	55 °C/min. 131 °F/min.	500 °C 932 °F	760 °C 1400 °F	760 °C 1400 °F	1,5 - 2 min. under vacuum	0 min.
Glaze bake	500 °C 932 °F	2 min	55 °C/min. 131 °F/min.	–	–	760 °C 1400 °F	1 min.*	0 min.

* The glaze bake can be carried out under or without vacuum. The grade of glaze can be increased by prolonging the holding time. Instead of using the Triceram® liner you can also use Triceram® bonder and Triceram® opaque.

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