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USER MANUAL


SD CERAM

METAL SUPPORTED DENTAL CERAMIC

**ASFARMA MEDICAL DENTAL PRODUCTS AND
PHARMACEUTICALS IND. TRADE. INCORPORATED
COMPANY/ İstanbul Branch**


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SD CERAM DENTAL CERAMIC ON METAL USER MANUAL

**According to VITA® classical color guide*

MATERIAL AND INDICATION

SD Ceram coating ceramic is a leucite-based glass ceramic and is colored according to the Vita® A1-D4 classic color guide. **SD Ceram** veneer ceramic is produced exclusively for dental applications and for use by dentists. The fitting between transparency and color provides the reconstruction of natural-looking teeth in the form of metal-ceramic crowns or bridges in traditional alloys with $14 - 15 \times 10^{-6} \times K^{-1}$ Glaze/Glaze Baking in Zircon ($25 - 500^{\circ} C$) thermal expansion.

Considerations

- Do not operate in uncalibrated furnaces.
- The deviation value of the specified temperature for each product should not be more than $\pm 10^{\circ} C$
- Powder mixed with liquid should not be put back into the box
- Unused product should be stored at room temperature, humidity value, protected from sunlight
- Should not be used in combination with ceramic materials and/or other manufacturer's materials other than product systems recommended by SD Ceram
- Unapproved framework materials should not be used
- Avoid sharp edges and corners on the framework or framework shapes that are not anatomically reduced
- Do not use Layner and Margin on lithium disilicate glass ceramics due to high firing temperatures.
- In order to ensure product performance and desired color target, do not start the process before ensuring the environment is clean.

CONTRAINDICATION

Complete ceramic restorations from dental ceramics and glass ceramics are not recommended for patients with teeth grinding or dysfunction.

The final decision should be made by the dentist.

SIDE EFFECTS

Although there are not enough controlled studies on the side effects of dental ceramics on volunteers; It has been observed that the following complications may occur in patients followed up after dental ceramic restorations.

- Fracture in the restoration material
- Loss of vitality in the underlying tooth
- Dental caries
- Restoration losses
- Endodontic problems
- Allergy and hypersensitivity reactions

There is no definitive evidence showing the direct relationship of these conditions with dental ceramics, factors such as the clinician's selection of the right method and material for the patient, the compliance of the procedures performed during preparation in the laboratory with the defined standard methods, the patient's compliance with the recommendations given after the procedure affect the success of the ceramic restoration and the occurrence of complications.


METAL FRAMEWORK PRODUCTION

Metal Framework (casting, machining, cleaning/oxidation) must be manufactured according to the manufacturer's instructions. The frame should have a reduced anatomical shape and provide sufficient space for an even coating of < 2 mm veneer ceramic. Sharp edges and corners are needed to be smoothed.

IMPORTANT: BAR CLEANING BEFORE APPLICATION OF DENTAL CERAMIC

Base metal alloys (Cobalt-Chromium and Nickel-Chromium) produce water-soluble chromium oxides during each heat treatment. Oxides should be cleaned before proceeding to porcelain application.

Thoroughly clean the framework and sheet with steam or water and a brush before proceeding to another porcelain application.

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SD CERAM OPAQUE-FIRING

SD Ceram Opaque should be produced in powder form.

SD Ceram powder opaque should be mixed with distilled water or opaque liquid before use. Application

1. Firing

After applying opaque, dry the crown or bridge in the open oven for 1-2 minutes with a starting temperature of 500 °C. It is then closed with a drying time of 6 minutes and heated to 965°C with a vacuum (vacuum starts at 500° C) at min 65 °C per minute. Waiting time: 1 minute with vacuum.

2. Firing

Thoroughly clean the framework and layer with steam or water and brush before proceeding to another porcelain application. With the application of the second opaque coating, the metal framework is completely covered. Repeat the procedures you did in the first opaque firing (965°C).

If necessary, apply SD Ceram Opaque in powder form of certain colors (Neutral, yellow, orange, brown) to obtain different colors for each opaque coating.

SD CERAM DENTIN-FIRING

Standard coating

Important warning: Thoroughly clean the framework and layer with steam or water and brush before proceeding to another porcelain application.

Mix powder ceramic (**SD Ceram** Opaque Dentin, Dentin and related Enamel) with modelling fluid until a creamy consistency is achieved. Apply Opaque Dentin, Dentin and Enamel ceramics in small quantities to the cervical and interdental region and compress with mild vibration. Then, a little Opaquer Dentin, Dentin and enamel are applied according to the crown restoration.

Contour onto this first application to compensate for sintering contraction.

1. Firing

After dentin application, the crown is placed on the firing tray at an initial temperature of 450°C.

Then, the oven is closed with a drying time of 6 minutes and heated to min 50 °C to 920°C per minute by vacuum (vacuum starts at 450°C) (firing temperature). Waiting Time: 1 minute with vacuum.

When the first Dentin/enamel firing is complete, straighten and clean the edges of the crown or bridge. Next, apply a second Dentin and enamel coating for the second Dentin firing to achieve the final form of restoration and compensate for the contraction of sintering.

2. Firing

Follow the procedure for the first Dentin cooking with a firing temperature of 915°C. Any additional Dentin firing should be done at a temperature of 915°C.

If necessary, apply **SD Ceram Opaque Dentin** powders of certain colors (neutral, yellow, orange, brown), Chroma Modifier in different shades (A, B, C, D) or Dentin Modifier powders of certain colors (white, yellow, orange, brown, pink, purple, blue) to obtain different colors in restoration body coatings.

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Glaze Coating / Glaze Firing

After coating the surface with a diamond tool, thoroughly clean the crown or bridge.

Firing

Thoroughly clean the framework and layer with steam or water and brush before proceeding to another porcelain application.

Place the crown on the firing tray at an initial temperature of 450°C. Next, turn off the oven for 3 minutes and heat without vacuum to a min. 50 °C to 910 °C (firing temperature) per minute. Waiting Time: 1 minute without vacuum.

Enhanced Coating Powders


SD Ceram porcelain system has a wide variety of different colored powders to color correct all veneers and imitates every possible natural tooth color feature:

SD Ceram Gingiva: different Gingiva powders can be used whenever it is necessary to compensate for missing gingival tissue in the pontic or cervical area of a restoration.

SD Ceram Enamel, Clear/Neutral, Opal, Opal Enamel, Transparent /Transparent light/Transpa T, Mamelon/Smart Mamelon, BL and Flu are mainly used in the enamel part of a restoration to obtain special color effects on the enamel part of the restoration.

SD Ceram Base, Cuspid and Fossae are special color powders that expand the possibilities of technicians by following special veneer techniques inspired by famous dental technicians and porcelain artists.

All enhanced coating powders must be fired in the first or subsequent Dentin firing program.

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SD CERAM METAL SUPPORTED DENTAL CERAMIC CLASSIFICATION OF PRODUCTS AND COLOR GROUPS

DESCRIPTION: Aesthetic ceramic coating on metal support

MC-DENTIN GROUP																				
OPAQUE POWDER	OP 0	OP 1	OP 2	OP 3	OP 4															
OPAQUE DENTIN	A0	A1	A2	A3	A3,5	A4	B0	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4		
DENTIN	A0	A1	A2	A3	A3,5	A4	BL2	BL1	B0	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4

DESCRIPTIONS

- *Opaque powder: Provides covering on metal.
- *Opaque dentin: Increases the opacity of the dentin.
- *Dentin: Imitates the natural transparency of enamel.

MC-ENAMEL GROUP				
ENAMEL INTENSIVE	57	58	59	60
ENAMEL OCCUSAL	Clear	BL ENAMEL	Neutral	
ENAMEL OPAL	O1	O2	O3	O4

DESCRIPTION


*ENAMEL: Imitates the incisal transparency of enamel.

MC-TRANSLUCENT GROUP								
TRANSLUCENT	White	Yellow	Orange	Light Brown	Light Blue	Blue	Grey	Pink
	Amber	T light - Brown	T-Orange	T-Grey	T-Dark grey	T-light Blue	T-Lemon	T Neutral

DESCRIPTION

*TRANSLUCENT: Creates special enamel pigments.


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MC-SMART DENTİN GROUP											
CHROMA	A	B	C	D	White	Yellow	Orange	Brown	Pink	Violet	Blue
MAMELON	Beech tree	Sunny Beach	Maple	Sandalwood	Teak	Fruit pink	Citron	Cream			
MODIFIER	Base 1	Base 2	Base 3	Base 4	Base 5	Cuspid	Fosse	FLU 1	FLU 2	FLU 3	FLU 4
GINGIVA	1	2	3	4	5	6	Dark	Bright			

DESCRIPTION

***MODIFIER:** Creates special enamel pigments.

-**CHROMA :** Provides color intensity.

-**MAMELON:** Creates natural color fluctuations in dentin.

-**GINGIVA:** Imitates the gingiva in order to eliminate the losses and provide an aesthetic appearance in gingival (recession) losses.

GLAZE GROUP
Glaze powder Üniversal
Glaze powder LFU


DESCRIPTION

***GLAZE:** Glazes porcelain surface.

SHADES GROUP											
STAIN POWDER	Shade A Fluor	Shade B Fluor	Shade C Fluor	Shade D Fluor	White fluor	Vanille fluor	Yellow fluor	Yellow 2 fluor	Orange fluor	Orange 2 fluor	Red Brown intensiv
	Rose pink	Smoke fluor	Pigeon blue fluor	Blue fluor	Red	Brown fluor	Dark Brown fluor	Black fluor	Grey fluor	Safari + fluor	Beige fluor
	Olive fluor	Green fluor	Dark Brown intensiv fluor	Khaki fluor	Champagne fluor	Rose fluor	Orange intensiv fluor	Khaki intensiv fluor	Black intensiv fluor	Violet fluor	Blue pink
	Red / violet	Safari fluor	Tabak intensiv fluor	Transpa 3 fluor	Medium orange fluor	Shade A light fluor	Shade B light fluor	Shade C light fluor	Shade D light fluor		

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DESCRIPTION

*SHADES: Color tones in the finished glazing.

SD CERAM COMBINATION TABLE OF DENTAL CERAMIC PRODUCTS ON METAL

	A						B	B	B						C				D
OPAQUE POWDER	OP-0	OP-1	OP-2	OP-2	OP-3	OP-4	OP-0	OP-0	OP-0	OP-0	OP-2	OP-3	OP-4	OP-1	OP-2	OP-3	OP-4	OP-1	
OPAQUE DENTİN	A0	A1	A2	A3	A3.5	A4	-	-	B0	B1	B2	B3	B4	C1	C2	C3	C4	D2	
DENTİN	A0	A1	A2	A3	A3.5	A4	BL2	BL1	B0	B1	B2	B3	B4	C1	C2	C3	C4	D2	
ENAMEL İNTENSİVE	57	58	59	59	60	60	BL	BL	57	57	59	60	60	58	59	60	60	58	

SD CERAM FIRING TABLE OF DENTAL CERAMIC PRODUCTS ON METAL


FIRING PROGRAM (°C)

Note: The firing temperatures given are determined in a Zuber Vario 300 dental oven and are approximate. In other oven types, the firing temperature may need to be adjusted.

Approximate Value : \updownarrow
+10°C
-10°C

FIRING TABLE °C	Initial Temperature	Closing Time	Vacuum Start	Heating Rate	1 Firing	Dwell Time
	°C	Minute	°C	°C / minute	°C	
SD ceram 1.Firing Opaque powder	500° C	6 min	500° C	65 °C min.	965°C	1 min
SD ceram 2. Firing Opaque powder	500° C	6 min	500° C	65 °C min	965°C	1 min
SD ceram 1. Firing Dentin/Enamel	450° C	6 min	450° C	50 °C min	920°C	1 min
SD ceram 2. Firing Dentin/Enamel	450° C	6 min	450° C	50 °C min	915°C	1 min
SD ceram Glaze	450° C	3 min	---	50 °C min	910°C	1 min

The firing temperature depends on the quantity of products in the oven. Higher quantities require up to 20-30° C higher firing temperatures .

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Technical information

Content Information:

Material: Silicate Glass Ceramic

Chemical content: The main components that bind to the glass ceramic structure are:
SiO₂, Al₂O₃, K₂O, Na₂O, CaO, B₂O₃

Classification according to DIN EN ISO 6872:2015'

SD ceram

Type: 1 Class: 1b

SD ceram Opaque

Coefficient of Thermal Expansion DIN EN ISO 6872

2 firing: $13.1 \times 10^{-6} \times K^{-1}$

4 firing: $13.2 \times 10^{-6} \times K^{-1}$

Transformation Point DIN EN ISO 6872

560° C

SD ceram Dentin, Enamel, vb.

Coefficient of Thermal Expansion DIN EN ISO 6872


2 firing: $13.0 \times 10^{-6} \times K^{-1}$

4 firing: $13.0 \times 10^{-6} \times K^{-1}$

Transformation Point DIN EN ISO 6872

580° C



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Warnings

Can be used only by specialist technicians and dentists.

Can be used only in clean working environments. Contamination of any additional material, such as the tabletop, work plate, preheat oven, or wax or liquids, with residues of CoCr alloy can lead to discoloration of restorations.

Thoroughly clean the framework and layer with steam or water and brush before proceeding to another porcelain application.

Safety glasses should be worn when working on ceramic restorations.
Remove dust and particles with vacuum.



Pay attention to high firing and pressing temperatures. Burn danger! Use oven gloves!



Due to the fact that there are different ceramic kilns in the market, the firing conditions may differ. This must be taken into account and the responsibility belongs to the customer!

The firing temperatures indicated are APPROXIMATE ONLY.

Approximate Value: \updownarrow $\begin{matrix} +10^{\circ}\text{C} \\ -10^{\circ}\text{C} \end{matrix}$

Warning about Investment Materials:

Investment materials include quartz dust. Do not breathe dust, wear a protective mask. Read the warnings written on the investment material package.


Recommended storage conditions:  25 °C max 25° C and normal air humidity  %60 max %60.

Store in closed containers.

















Do not pour powder mixed with liquid back into its original container.

Use a clean and dry spoon, spatula or brush to remove dust from containers.

Shelf life of dental ceramic products on metal is 5 years.

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	Confer with the user manual.		Store in dry place.
	Attention, pay attention to the warnings in the user manual.		Fragile, handle with care.
	The product is non-sterile .		Production date
	Disposable.		Do not use the product if the packaging is damaged.
	Store on temperatures below 25°C.		Expiration date
	Protect from direct sunlight.		Reference number
	Manufacturer		Lot number
	CE mark		Keep below 60%.



The recycling mark is suitable for the recycling of the package.

I hereby confirm that this document is translated to English Language in accordance with original document in Turkish Language.

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