



Liaoning Upcera Co., Ltd

User Instruction for Upcera Dental Zirconia Ceramics HT Zir Blank

Manufacturer: Liaoning Upcera Co., Ltd

Address: No.122 Xianghuai Road, Benxi Economic Development Zone Benxi, 117004, Liaoning China

Product scope: Dental Zirconia Ceramics

Revised date: 06th May 2014

Certification: CE0197、FDA、SFDA、ISO13485、JIS

Properties\Material	High Translucent
Sintering Density (g/cm ³)	6.05
Bending Strength (MPa)	1200
Average Grain Size (μm)	0.4
Amount of monoclinic phase after accelerated aging (%)	<10
Translucency	37% (sample thickness:1mm)
Radioactivity (Bq/g)	<0.1

Introduction:

Upcera dental zirconia blank is made from biocompatible yttria stabilized zirconia nano powder by cold isostatic pressing and machining. After fully densified, the blank has high strength/excellent biocompatibility and aesthetic. Upcera blank can be machined for dental restoration by different CNC or manual milling systems. Applications include both anterior or posterior single tooth or bridge restorations

Tooth Preparation instruction

- 1) A chamfer or shoulder (width 0.5-1.0mm) with a rounded inner angle is suitable.
- 2) For the occlusal surface and incisal part, prepare a space of 1.5-2.0mm.
- 3) Edge radius: 0.5mm
- 4) Preparation angle: 3° - 6°
- 5) For bridge constructions, have a look for the parallelism and avoid undercuts.

Framework Construction

- 1) In according to the general guidelines for full ceramic restoration, the wall thickness should not be less than 0.4 mm.
- 2) The height of the connectors shall be as big as possible. The cross section of the connector must be at least 9 mm². For the posterior regions there are no more than two pontics allowed between two abutment teeth.
- 3) To avoid chipping of the veneer material it is necessary to design the framework in an anatomical form

to get a constant thickness of the veneering material. If requested by the veneering material producer a liner must be applied. The construction of the framework must avoid that biting forces are directed to the side of the tooth.

Direction for Use

With CAD/CAM system or by manual method, Upcera dental zirconia blanks are milled into the required frame shape. The milling must add approximately 25% to the original size to compensate for shrinkage during the final sintering process.

- 1) The exact shrinkage rate or expansion factor is given according to the milling system used, please check blank the exact individual shrinkage factor on the zirconia.
- 2) Regarding long bridges, please remain the materials at the lingual side to prevent from distortion of the frameworks
- 3) While using blanks with connected aluminum or plastic holder, please make sure to keep a residue of zirconium material of no less than 1.5mm attached to the holder which is disposed of together with the holder after the milling process.

Dyeing (for detailed dyeing instruction, please refer to instruction for Upcera Color liquid operation)

For Coping, please use Upcera Color Liquid 5 shade, 2-5 minutes dipping

Use infrared lamp to dry the crown for 30-90 Minutes according to the length and thickness of the frame work

Sintering

Max Heating rate < 25 °C per minutes

Final temperature: 1480 °C

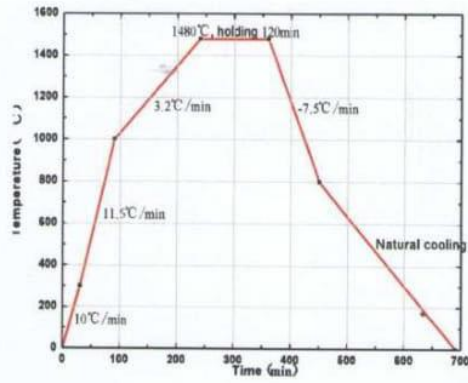
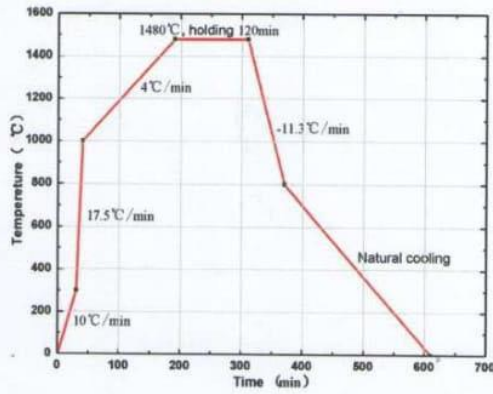
Holding temp at final temperature: 2 hours

Cooling is done without temperature control in the closed furnace. Never open furnace before it has reached the temperature under 80 °C to avoid thermal shocks..

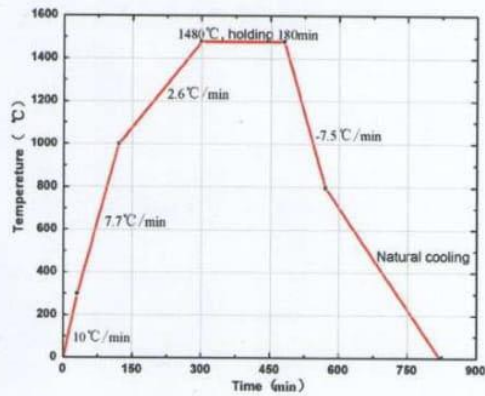
Sintering Chart (Recommended)

(1-5units)

(6-9units)



(≥ 10 units)



Finishing Art

After milling, the frames may be manually ground if necessary to add more finish to the shape. The framework must always be wet ground to avoid overheating. It's recommended to apply sand blasting with 50 micrometer aluminum oxide beans, this is helpful to clean the frame work and recover the strength loss during milling.

Porcelain Veneering

- 1) All known brands of zirconium frames can be used as long as their thermal expansion coefficient is between $9.5 \times 10^{-6}/^{\circ}\text{C}$ and $10.5 \times 10^{-6}/^{\circ}\text{C}$
- 2) Clean the framework after final shaping with hot steam
- 3) Follow the instructions for the porcelain of your choice

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