# HaHasmile Lithium Disilicate press ingots User Instruction

[introduction]

HaHasmile Lithium Disilicate press ingots all cast-porcelain blocks main component is lithium disilicate.

| | |
|---|---|
| Size(mm) | 12.5~12.7*10mm |
| Weight(g) | 2.97~3.02g |
| Density(g/cm3) | 2.48g/cm3 |
| Flexable Strength(Mpa) | 320Mpa |
| Vickers hardness(Mpa) | 560Mpa |
| Pressurized temperature(℃/℉) | 915-930/1679-1706 |

1、 Indications

Veneer, ultra-thin veneer, inlay, onlay, partial crown, front crown, posterior crown,3-unit bridge in the anterior region, the second premolar as the 3-unit bridge of the distal abutment, die-casting to the electroplated single-crown base, the upper superstructure of the single-dental restoration(front and rear teeth), the second premolar as the implant upper structure of the 3-unit bridge of the distal abutment, the primary sleeve crown.

2、 Contraindications

Posterior bridge in the molar area, 4-unit bridge or more unit bridge, inlay bridge, very deep under arm preparation, very few patients with residual dentition, patients with bruxism, single-ended fixed bridge,multi-unit bridge, Maryland fixed bridge other uses not included in the indications.

[Preparatory guidance]

The following guidelines and minimum thickness requirements are to be observed when using HaHasmile press ingots.

Veneer

When conditions permit, the preparation should be in the enamel layer.

Cutting edge preparation must not be located on static or dynamic occlusal surfaces.

The neck or lip area is prepared to a thickness of 0.6mm or more.

The edge preparation thickness is 0.7mm or more.

Front crown

The inner wall or groove of the shoulder must be rounded.

The shoulder is prepared to a width of at least 1mm.

The thickness of the cutting edge is about 1.5mm.

The buccal or lingual area is prepared to a thickness of about 1.2mm.

Inlay

Prepare a depth of at least 1mm.

The width of the separation ribs in the pit and groove area is at least 1mm.

The protruding inner edge prevents stress from concentrating on the porcelain inlay.

Do not make thin edges and feathery edges.

Posterior crown

The inner wall or groove of the shoulder must be rounded.

The shoulder is prepared to a width of at least 1mm.

The thickness of the cutting edge is not leass than 1.5mm.

The buccal or lingual area is prepared to have a thickness of not leass than 1.5mm.

Note: The basis preparation must be free of sharp corners and sharp corners. The inner edge or deep groove should be rounded when the shoulder is prepared.

[Production process]

Pre-prepared

1、 preliminary preparation

The colorimetric information of the patient's teeth, the abutment information, is provided by doctor. Choose a porcelain ceramic block of the appropriate color for use. Prepare the abutment.

2、 Making wax type

The wax type can be completed by hand dripping wax, cutting and 3D printing.

Note: The adhesion of the edges of the prosthesis must be guaranteed.

3、 Embedded

The wax pattern of the design is bonded to the base of the embedding ring though the casting path using a point wax knife. The length of the casting path is required to be 3-5mm and inclined at an angle of 45℃. The connection between the profile and the casting, casting and embedding ring must be rounded. Then, the separating agent is evenly coated on the inner wall of the embedding ring and the surface of the base, and then the wax type is embedded according to the operation instructions of the embedding material.

4、 Buring ring

Open the Maofu furnace, heat up to 850-860℃, and place the embedding block casting port down into the Moffai furnace. The wax burning time is more than 20 minutes.

5、 die casting

The die-casting furnace is opened, and after the die-casting temperature is ready, the press ingots and the die-casting bar are sequentially placed for die-casting.

Note:The powder must be applied before the die-casting rod is placed.

100g ring die casting curve:

| | Start Temp | Temp Rate | Max Temp | Temp Holding | Press Holding |
|---|---|---|---|---|---|
| HT | 700℃ | 50℃/min | 930℃ | 15 min | 3 min |
| LT | 700℃ | 50℃/min | 915℃ | 15 min | 3 min |

200g ring die casting curve:

| | Start Temp | Temp Rate | Max Temp | Temp Holding | Press Holding |
|---|---|---|---|---|---|
| HT | 700℃ | 50℃/min | 930℃ | 20 min | 5 min |
| LT | 700℃ | 50℃/min | 915℃ | 20 min | 5 min |

6、 Removal of embedding

After the die casting is completed, the embedded ring is cooled, and then the embedding ring is separated from the die cast bar. Use 4Bar sand flow for rough spraying until the casting appears.

7、 Acid etching surface

The surface of the casting was acid etched with a 1% HF solution, the casting was placed in an acid etching solution for 20-30 minutes, and then rinsed under running water.

Note: Wear rubber gloves during operation to avoid skin contact with HF acid.

HF acid solution can only be used in plastic containers.

Do not use glass or ceramic utensils.

8、 surface sandblasting

The acid-etched casting was sandblasted using a 2 bar sand flow to remove the oxide layer on the surface of the casting.

9、 Separation and polishing

The casting pass is cut using a sanding machine, and the excess casting path on the restoration is removed and then polished.

Grinding requirements and precasutions:

Refinement and adjustment of cast porcelain castings using a special polishing and polishing tool for cast porcelain. Avoid the use of improper tools, resulting in cracking of the edge of the casting or local overheating.

The grinding process should be wet grinding.

Ensure that the minimum thickness is maintained even after sanding.

Low speed and light pressure methods should be used to avoid overheating of ceramic materials.

Be careful and do not press hard.