Aidite

Biomic LiSi Connect

Zirconia bonding pretreatment agent



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Everyone with a healthy and beautiful smile

Introduction

A layer of LiSi Connect is sprayed on the surface of the zirconia bonding surface, and after one sintering, LiSi Connect crystallizes on the surface of the zirconia into a lithium disilicate coating to complete the surface modification of the zirconia. The zirconia treated by LiSi connect has the same clinical bonding effect as glass ceramics, which helps the clinical bonding performance of zirconia.

Advantages

LiSi connect coating is tightly combined with zirconia.①

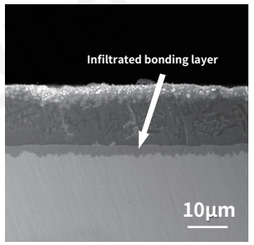
Ultra-thin micron-level lithium disilicate coating does not affect final restoration fitting/placement.②

Allowing long time stable and durable adhesive bond.

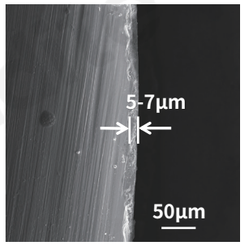
Adhesive force can support zirconia veneer bonding.

Compatible with all zirconia materials.

① LiSi connect will penetrate into zirconia after sintering to produce a strong bonding layer.

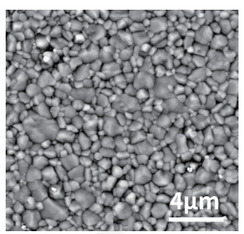


② LiSi connect will form an ultra-thin coating of 5-7μm on the surface of zirconia, which will not affect the restoration design and clinical placement.



Etching effect

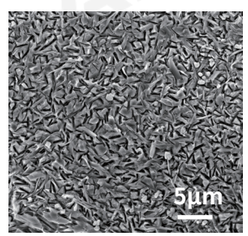
After LiSi connect is sintered on the zirconia surface, the zirconia surface presents a crystal structure similar to that of glass ceramics. After acid etching, it forms a rough porous morphology, achieving the effect of surface roughness.



SEM image of original surface of zirconia ($x10^4$)



SEM image of zirconia surface after spraying LiSi connect and sintering ($x10^4$)



SEM image of LiSi connect coating after acid etching ($x10^4$)

Bonding process

1.Spray a layer of Biomic LiSi connect on the surface of zirconia restoration after its final sintering, and then do the sintering of LiSi connect according to the specified curve.

2.Use 4.5% HF to etch for 90s during acid etching, or use 9.5% HF to etch for 60s.

3.Apply primer containing silane onto the surface of LiSi coating.

4.Use a resin-based cement to complete the bonding of the restoration.

Fast sintering for single unit

Starting temperature (℃)	Drying time (min)	Heating rate (℃/min)	Vacuum starting temperature (℃)	Vacuum final temperature (℃)	Maximum temperature (℃)	Holding time (min)	Final temperature (℃)
450	1	80	450	895	895	1.5	500-700

Common sintering

Starting temperature (℃)	Drying time (min)	Heating rate (℃/min)	Vacuum starting temperature (℃)	Vacuum final temperature (℃)	Maximum temperature (℃)	Holding time (min)	Final temperature (℃)
450	1	55	450	895	895	1.5	500-700

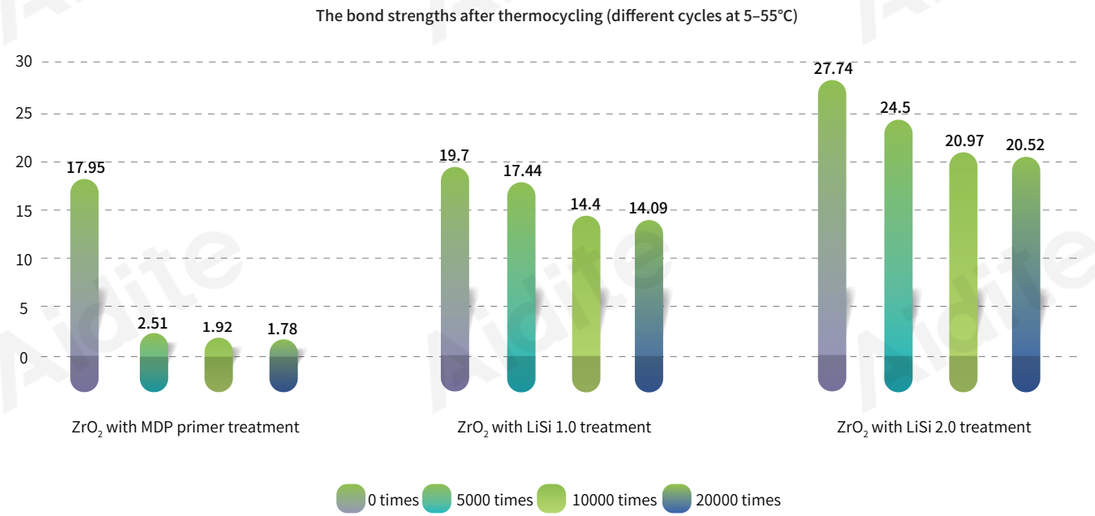
Remarks:

1.Continuous vacuuming is required at the highest temperature holding stage.

2.After sintering, the surface should be flat and smooth (similar to a glass surface); If the surface is rough, it can be raised by 5-10 ℃ and placed in the furnace for secondary sintering (the raised temperature needs to be adjusted according to the actual situation of the furnace).

It is recommended to increase the sintering temperature by 10℃ for restorations with a thickness greater than 2mm。

Experimental data



*Spray LiSi 2.0 onto the surface of zirconia, and then sinter; treat with 4.5% hydrofluoric IPS Ceramic Etching Gel (Ivoclar Vivadent, Liechtenstein) for 90 seconds; apply a layer of Monobond Plus coupling agent; use Tetric N-Bond universal adhesive; carry out shear bonding strength test.

*Soak in 5°C water for 20 seconds, then transfer to 55°C water and soak for another 20 seconds.

*Repeat this process for a specific number of times.