ZCG

Zirconia Ceramic

Instructions for Use

BAOT®

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CE 0120 ISO13485

Version: COP-27-PB-06 A/01

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Content

Characteristic Features

Life-like shades

1.Colorful shades, classic 16 & 26 shades ceramics

2.Distinct layers & natural colors

Mechanical properties

1.Natural strength

2.Excellent bonding force

Optimal compatibility

1.Compatible with various Zirconia coping brands

2.Compatible with other brands' bonding agents

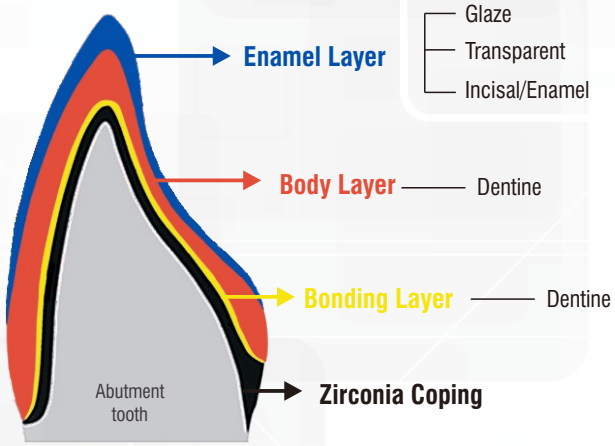
Tiny particle

1.High density, excellent bonding force, high color intensity

2.Low shrinkage, one step build up

Application Procedures

Ceramic layer distribution



*Anterior Teeth Crosscutting Structure
(ceramic layer distribution)

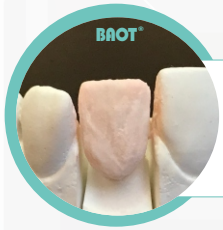
Application procedures

1. Coping treatment
2. Bonding layer
3. Dentine application
4. Enamel & Transparent application
5. Contouring & Glaze application

Coping treatment & Bonding layer

Checking

Check whether coping design is acceptable in terms of size, length and thickness by putting coping onto plaster model. If unacceptable, grind or redesign it.



Bonding layer build up

Apply a thin layer of Dentine on coping surface as the bonding layer before heat treatment. Roughen the coping surface to strengthen the bonding force between coping and dentine.

Heat treatment

Heat treatment referring to Firing Parameters.

Dentine application

Mixing

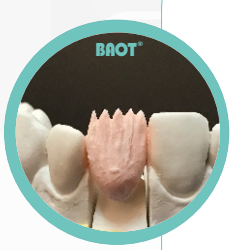
Use Modeling Liquid or distilled water to mix Dentine powder until it becomes pasty, as shown in the picture 1& 2.
Mix the Dentine into paste evenly and completely, as shown in the Picture 3.
Don't make it too dry or too wet.

Picture 1

Picture 2

Picture 3

Dentine build up



Judge the size and length of Dentine layer based on adjacent space and occlusion.
Due to shrinkage effect after firing, normally Dentine layer shall be 10% larger to compensate the firing shrinkage.

Absorb water during Dentine application, in order to make Dentine paste solid on the coping and to avoid chipping or moving which may lead to cracks, bubbles and mixed shades.

Dentine in interproximal area must be solid and linked, to avoid cracks by firing shrinkage.
Make sure Dentine covers all edges to avoid exposed area caused by firing shrinkage.

Enamel & Transparent application

Enamel build up

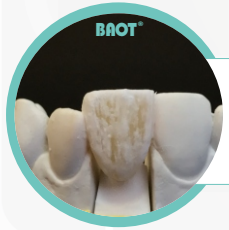
Apply Enamel to the incisal 1/3.
Use slightly wet brush pen to pull Enamel, making ceramic layers bonded tightly.

Transparent build up

Apply Transparent to the incisal 2/3, covering Enamel.

Firing

Firing according to the Firing Parameters.
If the ceramic is too wet before firing, lengthen the firing time.



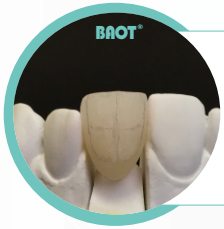
Add-on

Use brush to vibrate tweezer slightly and absorb water to make ceramic condensed.
Repeat until no water seep out.
Do not condense too heavily. Avoid ceramic layers collapsing or mixing.

Firing

Add-on firing temperature should lower than the first firing.
Refer to Firing Parameters.

Countouring & Glaze application

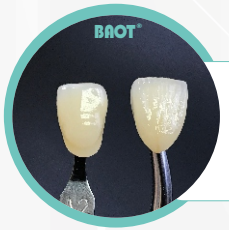


Contouring

After firing, use non-contaminated stones, discs, or diamond burs to refine the anatomy. Check whether additional ceramics are needed.
If additional are required, firing temperature should be 5℃–10℃ lower than the first firing.
* Add-on too many times is not recommended, or it may lead to undesired results.

Glaze Mixing

Mix Glaze powder with Glaze & Stain Liquid, making it pasty &thoroughly.
If the glaze paste is too dry or too watery, it may lead to insufficient glossiness.



Coating & Shades matching

Coating should be evenly distributed. Don't coat it heavily.
Match shades with a SHADE GUIDE.
If required, use the tip of the staining brush to spread a thin film of Stain Liquid until satisfactory shade is obtained.

Firing

After Glaze application, fire the coping under atmosphere pressure according to the Firing Parameters.
* If firing temperature is higher than the Firing Parameters, it may lead to circular formation and unnatural over-glossy surface and opacity.
* If firing temperature is lower than the recommended parameter, it may lead to matt and rough surface.

Firing Parameters

Condition	Liner	Body	Add-on	Glaze & Stain
Drying temp.(℃)	550	500	500	500
Drying time(min)	2	3	2	2
Heating time(min)	2	3	2	2
Heating rate(℃/min)	50	50	50	50
Firing temp.(℃)	960	920	910	890
Holding time(min)	1	1	1	1
Cooling time(min)	4	4	4	4
Cooling temp.(℃)	550	550	550	550
Vacuum start(℃)	500	500	500	-
Vaccum end(℃)	960	920	910	-

Note:
This Firing Parameters chart is only for reference.
Optimal results will be obtained during practical operation.
Firing temperature and holding time shall be adjusted according to furnace condition, crown design and bridge length.

Shades Matching

16 Shades

VITA 16	BAOT 16	OPAQUE	DENTINE	ENAMEL	TRANSPARENT	MARGIN	CERVICAL	GLAZE
A1	A1	A1	A1	E-2A	T-2	M-2A	C-2A	G-2
A2	A2	A2	A2	E-2A	T-2	M-2A	C-2A	G-2
A3	A3	A3	A3	E-2A	T-2	M-2A	C-2A	G-2
A3.5	A3.5	A3.5	A3.5	E-2B	T-2	M-2A	C-2A	G-2
A4	A4	A4	A4	E-2B	T-2	M-2A	C-2A	G-2
B1	B1	B1	B1	E-2B	T-2	M-2B	C-2B	G-2
B2	B2	B2	B2	E-2B	T-2	M-2B	C-2B	G-2
B3	B3	B3	B3	E-2B	T-2	M-2B	C-2B	G-2
B4	B4	B4	B4	E-2B	T-2	M-2B	C-2B	G-2
C1	C1	C1	C1	E-2B	T-2	M-2C	C-2C	G-2
C2	C2	C2	C2	E-2B	T-2	M-2C	C-2C	G-2
C3	C3	C3	C3	E-2A	T-2	M-2C	C-2C	G-2
C4	C4	C4	C4	E-2A	T-2	M-2C	C-2C	G-2
D2	D2	D2	D2	E-2B	T-2	M-2D	C-2D	G-2
D3	D3	D3	D3	E-2B	T-2	M-2D	C-2D	G-2
D4	D4	D4	D4	E-2B	T-2	M-2D	C-2D	G-2

26 Shades

VITA 26	BAOT 26	OPAQUE	DENTINE	ENAMEL	TRANSPARENT	MARGIN	CERVICAL	GLAZE
1M1	B1M1	B1M1	B1M1	E-2A	T-2	M-2B	C-2B	G-2
1M2	B1M2	B1M2	B1M2	E-2A	T-2	M-2B	C-2B	G-2
2L1.5	B2L1.5	B2L1.5	B2L1.5	E-2A	T-2	M-2B	C-2B	G-2
2L2.5	B2L2.5	B2L2.5	B2L2.5	E-2A	T-2	M-2B	C-2B	G-2
2M1	B2M1	B2M1	B2M1	E-2A	T-2	M-2D	C-2D	G-2
2M2	B2M2	B2M2	B2M2	E-2A	T-2	M-2A	C-2A	G-2
2M3	B2M3	B2M3	B2M3	E-2A	T-2	M-2B	C-2B	G-2
2R1.5	B2R1.5	B2R1.5	B2R1.5	E-2A	T-2	M-2A	C-2A	G-2
2R2.5	B2R2.5	B2R2.5	B2R2.5	E-2A	T-2	M-2A	C-2A	G-2
3L1.5	B3L1.5	B3L1.5	B3L1.5	E-2A	T-2	M-2C	C-2C	G-2
3L2.5	B3L2.5	B3L2.5	B3L2.5	E-2A	T-2	M-2B	C-2B	G-2
3M1	B3M1	B3M1	B3M1	E-2A	T-2	M-2C	C-2C	G-2
3M2	B3M2	B3M2	B3M2	E-2A	T-2	M-2A	C-2A	G-2
3M3	B3M3	B3M3	B3M3	E-2A	T-2	M-2B	C-2B	G-2
3R1.5	B3R1.5	B3R1.5	B3R1.5	E-2A	T-2	M-2A	C-2A	G-2
3R2.5	B3R2.5	B3R2.5	B3R2.5	E-2C	T-2	M-2A	C-2A	G-2
4L1.5	B4L1.5	B4L1.5	B4L1.5	E-2A	T-2	M-2C	C-2C	G-2
4L2.5	B4L2.5	B4L2.5	B4L2.5	E-2A	T-2	M-2A	C-2A	G-2
4M1	B4M1	B4M1	B4M1	E-2A	T-2	M-2C	C-2C	G-2
4M2	B4M2	B4M2	B4M2	E-2C	T-2	M-2A	C-2A	G-2
4M3	B4M3	B4M3	B4M3	E-2C	T-2	M-2A	C-2A	G-2
4R1.5	B4R1.5	B4R1.5	B4R1.5	E-2A	T-2	M-2A	C-2A	G-2
4R2.5	B4R2.5	B4R2.5	B4R2.5	E-2C	T-2	M-2A	C-2A	G-2
5M1	B5M1	B5M1	B5M1	E-2A	T-2	M-2C	C-2C	G-2
5M2	B5M2	B5M2	B5M2	E-2C	T-2	M-2A	C-2A	G-2
5M3	B5M3	B5M3	B5M3	E-2C	T-2	M-2A	C-2A	G-2

Troubleshooting Guide

1st Step: Make sure you are doing coping heat treatment.			
	Item	Standard	Remarks
Coping heat treatment	Grinding	No burs and dents	Burs may lead to cracks, and dents may lead to bubbles.
	Steam cleaning	Steam cleaning clears off debris after sand blasting. No debris or other contamination	Deep cleaning further enhances mechanical bonding force, and avoid bubble and ceramic chipping.
	Heat treatment	Degreasing, forming bonding film	This treatment reduces risks of cracks or bubbles,while increases chemical bonding force.

2nd Step: Make sure no contamination in ceramic powder. Take out powder from bottle in small amount, and do not refill powder back to bottle once taken out.			
	Problems	Causes	Solutions
Body Application	Bubbles	Dentine not dense enough	Apply Dentine evenly on coping. Compress and absorb water.
		Too high firing temperature	Follow recommend firing temperature. If the temperature is still too high, reduced 5℃ more.
	Ceramic chipping	Contaminated coping	Ensure coping free of grease. Avoid picking up coping by hand, use tweezer instead.
		No bonding layer	Apply a thin layer of dentine as bonding agent.
	Burst of ceramic	Not enough drying time or fast heating rate	Extend drying time or lower the heating rate.
	Cracks	Gap between ceramic layer and developmental groove	Use brush to fill the gap and compress softly.
	Chap	Too long drying time	Shorten drying time.

	Problems	Causes	Solutions
Body Application	Incisal crack	Too thick Dentine layer or too short cooling time	Apply suitable dentine layer, and extend cooling time.
		Coping is too small, causing too much ceramic build up	Make sure to prapare the proper coping.
	Crack during ceramic trimming (feels soft)	Insufficient sintering temperature causes uncompleted crystalization, which leads to insufficient cohesive force of crystals. Or over sintering may lead to glass phase, making ceramic surface tender, may lead to crack when contouring.	Set temperature correctly, 925℃ is suggested. Please pay attention to the temperature is for calibrated furnaces.
	Poor color	Furnace contaminated by volatile material	Rise furnace temperature from 650℃ to 960℃ under vacuum condition, holding for 10 mins, in order to make volatile material dismissed.
		Dentine and Transparent layer are insufficient or too much	Apply appropriate Dentine and transparent layer.
		Greenish color, too low firing temperature or too short firing time	Increase firing temperature and firing time, and cleaning furnace.
	Opaque Color	Different layers of ceramic mixed, too low temperature	Don't vibrate too much and too heavily.
		Abnormal vacuum condition in furnace	Set the furnace vacuum condition correct.
Glaze Application	Lack of glossiness	Too low firing temperature	Increase firing temperature.
		Unclean surface after contouring	Clean prosthesis surface before applying Glaze.
		Not well-laid Glaze paste or too condensed	Make Glaze paste well-laid.
	Over glossy	Too high firing temperature	Lower firing temperature.

Attention

Operation Attention

Please refer to Firing Parameters to get optimal restoration results.
Adjust drying time according to crown or bridge size to ensure ceramics in completely dry condition.
Adjust firing temperature and time according to furnace condition and the quantity of restorations.
Make sure vacuum pump is well maintained in order to initiate vacuum condition quickly.
Make sure ceramics are not contaminated by other materials.
Take appropriate amount of ceramics for building up. The remaining exposed ceramics are not suggested to use again.

Safety Warning

Products should be used by trained dental technicians.
Wearing protection suit and mask are suggested during operation.
If in eyes or mouth by chance, rinse immediately with plenty of water.
Powder-allergic personnel are not suggested to use.

Storage

Please seal the bottle porperly after use.
Please store our products in clean and ventilated places, and avoid direct sunlight.