kuraray

Noritake

CERABIEN ZR

Porcelain for zirconia ceramic dental restorations

CERABIEN™ ZR

Technical Instructions

Kuraray Noritake Dental Inc.

Contraindications:

If the patient is hypersensitive to potassium-aluminosilicate glass or any other components, this product must not be used.

Caution and Warning:

1. If the patient or the dental professional demonstrates a hypersensitivity reaction, such as rash, dermatitis, etc., discontinue use of the product and seek medical attention immediately.
2. When mixing materials, or grinding a restoration being fabricated, use an approved dust mask and vacuum with an air filter to protect your lungs from inhaling either dust or liquid.
3. When mixing materials, or grinding a restoration being fabricated, use safety glasses to prevent dust or liquid from getting into your eyes. If dust or liquid gets into your eyes, immediately rinse with copious amounts of water and seek medical attention.
4. Do not use for any purposes except for fabricating dental restorations. This product is for dental application only.
5. The restoration is very hot immediately after baking. Do not touch it with your bare hands for a considerable amount of time after removing it from the furnace.
6. FC Paste Stain, IS LIQUID and ES LIQUID are flammable. Do not use them near fire or high-temperature objects.
7. IS LIQUID is a stimulant liquid. When using it, have good ventilation and if necessary, wear a protective mask, safety glasses and gloves.
8. Stains and plaque can accumulate on a restoration, once it has been put in position in the patient' s oral cavity, depending on the patient's eating habits or food choices. Instruct patients about the importance of cleaning their restorations.

Precautions in use:

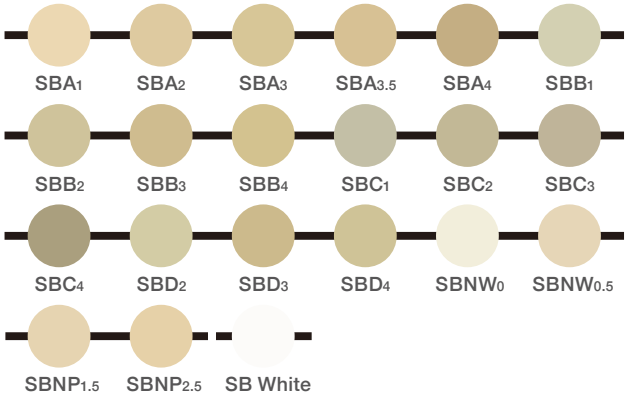
1. When using a porcelain furnace for the first time, perform a baking test run in advance, since the working temperatures of porcelain furnaces may vary from one device to another.
2. Use only the product with the LIQUIDs named in the Technical Instructions; otherwise, the restoration might change color when it is baked.
3. Do not mix the product with any dental porcelain other than the product or use it in unauthorized combinations. CZR PRESS LF and CZR PRESS may be used with the product if they are used according to the procedures stated in their respective Instructions for Use.
4. Do not use Internal Stain as an alternative to External Stain. Do not use External Stain or FC Paste Stain as an alternative to Internal Stain.
5. Do not apply External Stain over FC Paste Stain.
6. Do not mix External Stain with FC Paste Stain. You may mix Internal Stain shades with each other, or External Stain shades with each other, or FC Paste Stain shades with each other, when making color adjustments.
7. FC Paste Stain may be used for restorations fabricated using CERABIEN™ ZR or CZR PRESS. For detailed information, see the FC Paste Stain Technical Instructions.
8. If the FC Paste Stain in the container has any precipitate at the bottom, stir before use until the contents are uniformly mixed, taking care not to entrap any air bubbles.
9. When adjusting the viscosity of FC Paste Stain, dispense the required amount of FC Paste Stain from the container and mix ES LIQUID with it until you obtain the desired consistency. Do not put the ES LIQUID directly into the FC Paste Stain container.
10. Do not use Margin MRP or Add-on for additional build-up if you are following the C or D directions for use in the Instructions for Use; otherwise, too much luster will be developed.

Storage:

1. The product must be stored in a cool and dry place. Keep away from direct sunlight.
2. The product should be stored at 1-30°C(33.8~86°F).
3. After using FC Paste Stain, wipe any remaining paste off the rim of opening of the container and tighten the cap securely to prevent the contents from drying out.
4. The product must be stored in an appropriate place where only dental personnel have access.
5. The product must be used by the expiration date indicated on the package.
6. Do not store FC Paste Stain, IS LIQUID and ES LIQUID near fire or high-temperature objects.

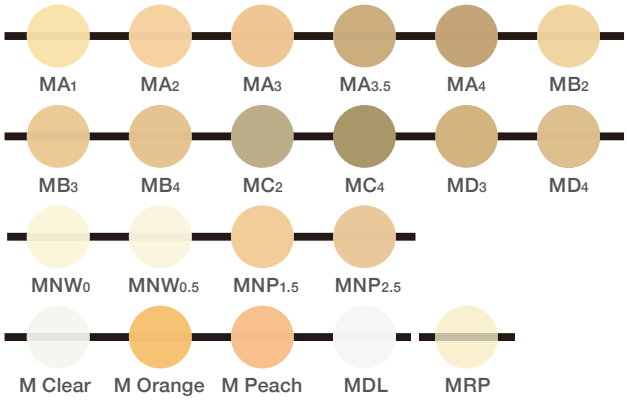
Shade Base

Content: 10g / 50g / 200g (SB White: 10g / 50g only)



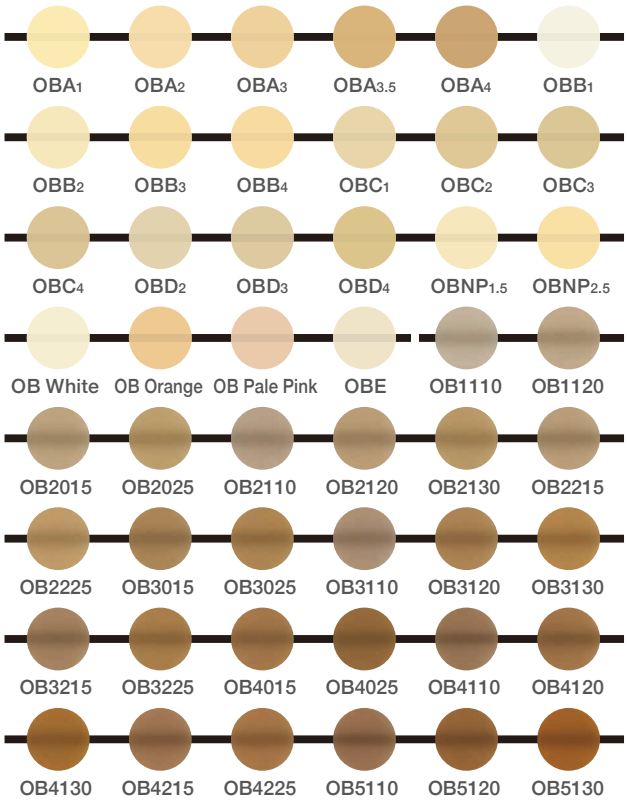
Margin

Content: 10g



Opacious Boby

Content: 10g / 50g / 200g

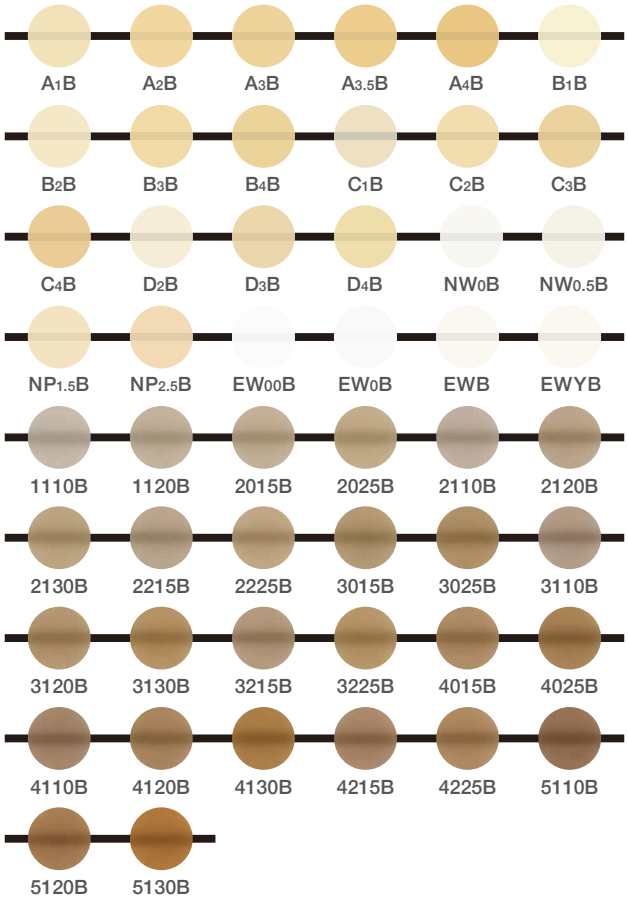


Cervical

Content: 10g / 50g / 200g

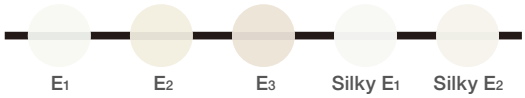
Body

Content: 10g / 50g / 200g



Enamel

Content: 10g / 50g / 200g

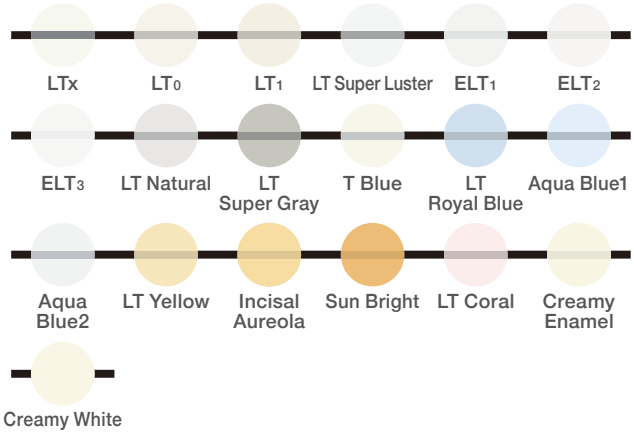


Translucent

Content: 10g / 50g / 200g

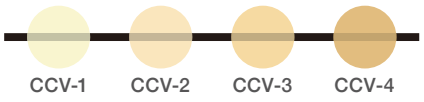
Luster

Content: 10g / 50g / 200g



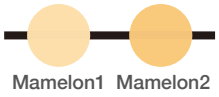
Clear Cervical

Content: 10g / 50g / 200g



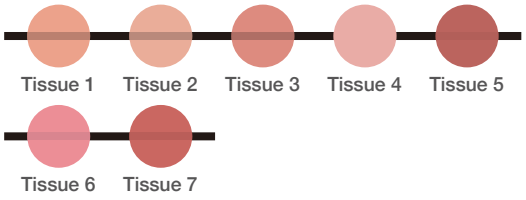
Mamelon

Content: 10g / 50g



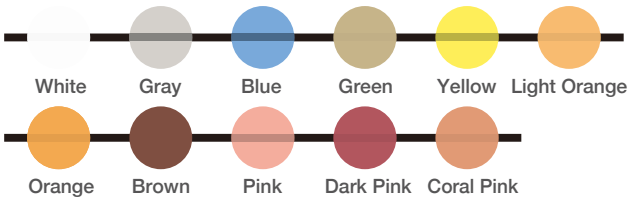
Tissue

Content: 10g / 50g



Modifier

Content: 10g / 50g



Add-on

Content: 10g / 50g

Internal Stain

Content: 3g

External Stain

Content: 3g / (Glaze, FL Glaze, VC Glaze: 10g) / (Glaze: 30g)

FC Paste Stain

Content: 3g / 5g (Glaze, Clear Glaze)

Type and Class (ISO 6872: 2015)

Type: 1 / Class: 1

Liquids

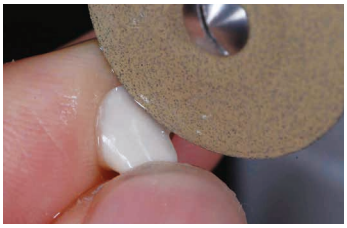
Each of this product's components must be mixed with the precise liquid, as specified.
(Components other than Internal Stain, External Stain and FC Paste Stain may be mixed with distilled water.)

Component	Correct liquid to use				
	CERABIEN™ZR FORMING LIQUID 100mL	Magic Formaer 20mL	MEISTER LIQUID 100mL	IS LIQUID 10mL/100mL	ES LIQUID 10mL/100mL
Margin	●	●			
Shade Base	●		●		
Opacious Body	●		●		
Cervical	●		●		
Body	●		●		
Enamel	●		●		
Translucent	●		●		
Luster	●		●		
Clear Cervical	●		●		
Mamelon	●		●		
Tissue	●		●		
Modifier	●		●		
Add-on	●		●		
Internal Stain				●	
External Stain					●
FC Paste Stain					●

Conditioning

1 Conditioning the zircoia framework surface

Condition the zirconia surface by following steps (1) and (2) given below, if you are using "KATANA™ Zirconia" . If you are using a dental ceramic milling block other than "KATANA™ Zirconia" , pretreat the zirconia surface by following the Instructions for Use supplied with that product.



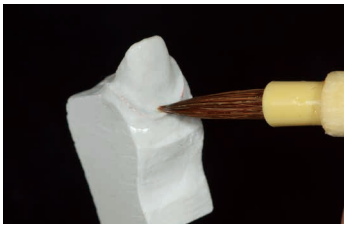
1 | Morphological correction

Check the fit on the plaster model between the framework and the abutment at the inner surface, margins, etc. Check that there is enough space for the thickness of the porcelain layer; ensure the zirconia is the proper thickness and that there are no cracks on the restoration surface.
Grind the entire restoration using a diamond bur or a silicone point containing diamond particles.
Use a copious spray of water, or make sure that **the restoration is thoroughly wet** while working on it.
If necessary, perform detailed anatomical carving (crown, surface contours, mamelon structure, margins) where the porcelain is layered for full-zirconia restorations, or those with a zirconia-fabricated crown. Grind the areas which come in contact with the opposing teeth. Check for any cracks after completion.

2 | Sandblasting and cleaning

Sandblast the restoration surface (at 0.2 MPa or less) with 50µm alumina particles, to allow the porcelain to bond well to the zirconia. Follow with approximately 10 minutes of ultrasonic cleaning using either acetone or alcohol.
For full-zirconia restorations, sandblast the entire restoration, excluding the areas which come in contact with the opposing teeth.
Ultrasonic cleaning should be performed, as necessary, before the porcelain is layered during each fabrication step.

2 Preparation of the plaster model



Apply a plaster curing agent to the areas where the plaster model comes in contact with the porcelain (the pontics, abutment margins, opposing tooth models) and allow it to dry. Follow with an application of a plaster separating agent (e.g. Magic Separator) to ensure easier separation of the plaster model.

Fabrication steps (for different types of restorations)

Directions for Use A	**Restorations using a zirconia framework**	See pages 7
Directions for Use B	**Anatomical zirconia coping**	See pages 11
Directions for Use C	**Full-zirconia restorations**	See pages 13
Directions for Use D	• **Restorations** (using a zirconia framework) made using CZR PRESS LF (porcelain) and CZR PRESS (pressed ingot) • **Restorations** (anatomical zirconia coping) made using CZR PRESS LF (porcelain)	See pages 14

Restorations using a zirconia framework

• See “Conditioning” on page 6 for directions on conditioning the zirconia surface and plaster model.

1 Building-up of Shade Base, Opacious Body, and Baking

Use Shade Base if you want to mask or adjust the color of the zirconia framework.

1 First layer (Application of a wash and baking)

To improve the bond strength of the Shade Base to the zirconia, apply a thin layer of Shade Base over the entire zirconia framework (including the margins). Bake the restoration according to **Baking Schedule 2**.
Mix Shade Base and Opacious Body and apply, as specified, to adjust the degree of masking of the framework.

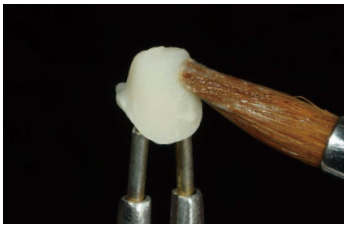
2 Second layer

Apply Shade Base over the entire framework, approximately 0.2 mm thick, in order to match the correct shade to the underlying final shade. Bake the restoration according to **Baking Schedule 3**. Apply Opacious Body after baking, if necessary.

Use Opacious Body if you want to take advantage of the translucency and color of the zirconia framework.

1 First layer (Application of a wash and baking)

Apply a thin layer of Opacious Body over the entire zirconia framework (including the margins) to improve the strength of the Opacious Body’s bond to the zirconia. Bake the restoration according to **Baking Schedule 2**.
Mix Shade Base and Opacious Body and apply, as specified, to adjust the degree of masking of the framework.



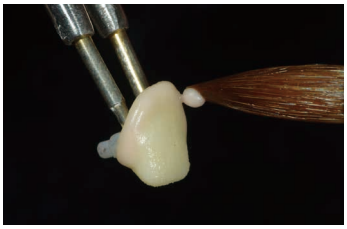
2 Second layer

Apply Opacious Body approximately 0.3 mm thick over the entire framework, creating the mamelon structure. It is advisable to bake the restoration at this point according to **Baking Schedule 4**. This will prevent the mixing of different types of porcelain at a subsequent step.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
2	5	600	1112	600	1112	45	81	96	930	1706	930	1706	-	1	4
3	5	600	1112	600	1112	45	81	96	930	1706	930	1706	-	1	4
4 *3	7-10	600	1112	600	1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4

*1 96kPa = 72cmHg (29 inchesHg)
*3 The baking conditions are established on the assumption that a single crown is baked. Adjust the dry-out time and baking temperature when baking bridges.

2 Building-up of Cervical and Body



1 Cervical

Build-up the cervical area of the framework with Cervical or a mixture of Body and Cervical (See the section: “Combination Table” on page 21 for the mixing ratio).

2 Body

Build-up a proper crown contour on the framework with Body.

Cut the proximal and labial surfaces back to create the mamelon structure after applying Body. The Body porcelain must remain at least 0.8 mm thick after it has been cut back.
Use Modifier, if necessary, to adjust the shade.

3 Building-up of Enamel

Restore the original contour by applying Enamel one-third of the way from the incisal edge. Avoid over- layering too much Enamel, as this will result in a whitish appearance. Apply Translucent and Luster over the Enamel, as necessary, to provide the desired appearance of depth.

Use Internal Stain, if necessary. For details, see page 15.
Before using Internal Stain, bake the porcelain layers (Cervical, Body, Enamel, etc.) according to **Baking Schedule 5**. The restoration should have a slight luster across the porcelain surface after baking.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
5 *3	7-10	600	1112	600	1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4

*1 96kPa = 72cmHg (29 inchesHg)
*3 The baking conditions are established on the assumption that a single crown is baked. Adjust the dry-out time and baking temperature when baking bridges.

4 Building-up of Translucent or Luster and baking

Apply Translucent or Luster (and Clear Cervical, if needed) to the entire crown surface, making the crown approximately 10 percent larger than its target size. This will allow for the likelihood of shrinkage, due to baking.
See page 17 for how to use Luster or Clear Cervical.

Bake the restoration according to **Baking Schedule 7** after building-up with porcelain.
The restoration should have a slight luster across the porcelain surface after baking. Corrections for any thin spots, hollows, etc. can be made by adding porcelain and baking again, according to **Baking Schedule 8**. The highest baking temperature should be approximately 10 degrees lower than the one given in the baking schedule, if a small amount of porcelain needs to be added to the contact area.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
7 *3	7-10	600	1112	600	1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4
8 *4	7	600	1112	600	1112	45	81	96	930	1706	930	1706	-	0.5	4

*1 96kPa = 72cmHg (29 inchesHg)
*3 The baking conditions are established on the assumption that a single crown is baked. Adjust the dry-out time and baking temperature when baking bridges.
*4 This is baking temperature for cases when Opacious Body, Cervical, Body, Enamel, Translucent, Luster, Clear Cervical, Mamelon, Modifier and Tissue are applied additionally

5 Morphological correction

Begin making the morphological corrections from the proximal area.
Polish the area by using the straight part of a diamond bur which makes it easier to modify the contact area.
Create the labial groove with the tip part of a diamond bur. Proceed by extending it first in the vertical direction, then in the horizontal direction.
Use the small head of a diamond bur to create the serration and the natural tiny grooves.

Perform the final morphological correction, paying special attention to the symmetry of the tooth, using a paper-abrasive material or silicone point.
Polish away any roughness, especially in the proximal and marginal areas, while carefully maintaining an appropriate emergence profile.
Clean the surface, as necessary, after completing the morphological correction.

6 Application of Glaze and Stain, baking and finishing

Reproduce the appropriate gloss by using any of the following methods:

Reproducing gloss by self-glaze

Using Pearl Surface C (for semi-finishing), perform fine-polishing according to **Baking Schedule 9** after polishing.

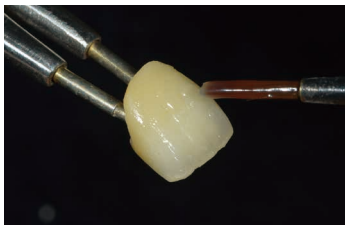
Bake the restoration at a lower temperature (30 to 40°C lower than the usual self-glaze baking temperature) to create varying levels of gloss on the surface. Selectively fine-polish with Pearl Surface F (for finishing) after baking.

Reproducing gloss using External Stain Glaze or CZR PRESS Glaze*

Apply a thin coat of External Stain Glaze or CZR PRESS Glaze. Bake the restoration according to **Baking Schedule 10**.

Apply External Stain and bake if the shade needs to be adjusted. Different shades of External Stain may be mixed. Use silicone points for final adjustment after baking.

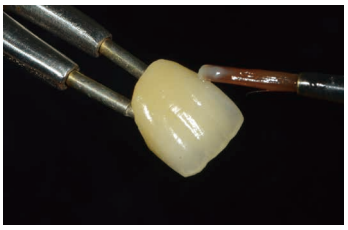
*CZR PRESS Glaze is a CZR PRESS LF item.



Reproducing gloss using FC Paste Stain Glaze or Clear Glaze

Apply a thin coat of FC Paste Stain Glaze or Clear Glaze. Bake the restoration according to **Baking Schedule 11**.

Apply FC Paste Stain and bake if the shade needs to be adjusted. Different shades of FC Paste Stain may be mixed. Use silicone points for final adjustment after baking.



Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
9	5	600	1112	-	-	50	90	0	-	-	930	1706	-	0.5	4
10	5	600	1112	-	-	50	90	0	-	-	930	1706	-	-	4
11*6	5	600	1112	-	-	45	81	0	-	-	910	1670	-	-	4

*1 96kPa = 72cmHg (29 inchesHg)
*6 On the occasion of use to CZR Press or CZR Press LF surface, please refer to CERABIEN™ ZR FC Paste Stain IFU (Instructions for Use).

7 Additional layering

MRP (Margin Repair Porcelain)

Apply MRP after finishing, if there is insufficient porcelain of the margins. Apply Add-on for any insufficient porcelain on the crown. Bake the restoration according to **Baking Schedule 12**.
Add-on baking can be performed simultaneously with self-glaze baking.

Attention **Do not use MRP before finishing, because it cannot withstand high temperature. It should be used to correct the contacts or contours on the margins after finishing.**

After the additional application, contour and polish the restoration using silicone points.

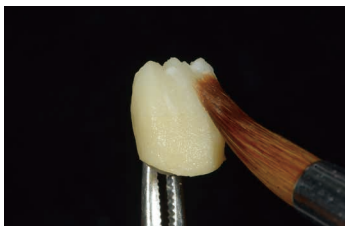
Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
12	5	600	1112	-	-	45	81	0	-	-	880	1616	-	-	4

*1 96kPa = 72cmHg (29 inchesHg)

Anatomical zirconia coping

• See “Conditioning” on page 6 for directions on conditioning the zirconia surface and plaster model.

1 Application of a wash and baking

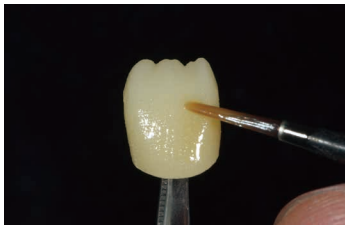


Apply a thin layer of Translucent or Luster over the entire zirconia coping to improve the bond strength of the porcelain to the zirconia. Bake the restoration according to **Baking Schedule 2**.
Perform the wash baking using Internal Stain if there is not enough space to apply the porcelain.
It is important that the Internal Stain covers all the surfaces that have been layered with Translucent or Luster. Baking the wash should be performed according to **Baking Schedule 2**.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
2	5	600	1112	600	1112	45	81	96	930	1706	930	1706	-	1	4

*1 96kPa = 72cmHg (29 inchesHg)

2 Application of Internal Stain and baking



Apply Internal Stain to adjust the color of the restoration, as necessary. Bake the restoration according to **Baking Schedule 6**.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
6	5	600	1112	-	-	50	90	0	-	-	900	1652	-	-	4

*1 96kPa = 72cmHg (29 inchesHg)

3 Building-up of Translucent or Luster and baking

Apply Translucent or Luster (and Clear Cervical, if needed) to cover the entire crown surface, making the crown approximately 10 percent larger than the target size of the crown. This allows for the likelihood of shrinkage due to baking. See page 17 Luster.

Bake the restoration according to **Baking Schedule 7** after building-up with porcelain. The restoration should have a slight luster across the porcelain surface after baking. Corrections for any thin spots, hollows, etc. can be made by adding porcelain and baking again according to **Baking Schedule 8**. The highest baking temperature should be approximately 10 degrees lower than the one given in the baking schedule, if a small amount of porcelain needs to be added to the contact area.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
7 *3	7-10	600	1112	600	1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4
8 *4	7	600	1112	600	1112	45	81	96	930	1706	930	1706	-	0.5	4

*1 96kPa = 72cmHg (29 inchesHg)
*3 The baking conditions are established on the assumption that a single crown is baked. Adjust the dry-out time and baking temperature when baking bridges.
*4 This is baking temperature for cases when Opacious Body, Cervical, Body, Enamel, Translucent, Luster, Clear Cervical, Mamelon, Modifier and Tissue are applied additionally

4 Morphological correction

Begin the morphological correction from the proximal area. Polish it by using the straight part of a diamond bur, which makes it easier to modify the contact area. Create the labial groove with the tip part of a diamond bur.

Proceed by extending in the vertical direction, then in the horizontal direction. Use the small head of a diamond bur to create the serration and the natural tiny grooves.

Perform the final morphological correction, paying special attention to the symmetry of the tooth, using a paper-abrasive material or silicone point. Polish away any roughness, especially in the proximal and marginal areas, while carefully maintaining an appropriate emergence profile.

Clean the surface, as necessary, after completing the morphological correction.

5 Application of Glaze and Stain, baking and finishing

Reproduce the appropriate gloss by using any of the following methods:

Reproducing gloss by self-glaze

Refer to “Reproducing gloss using self-glaze” in “Directions for Use A” on page 10.

Reproducing gloss using External Stain Glaze or CZR PRESS Glaze*

Refer to “Reproducing gloss using External Stain Glaze or CZR PRESS Glaze” in “Directions for Use A” on page 10.

*CZR PRESS Glaze is a CZR PRESS LF item.

Reproducing gloss using FC Paste Stain Glaze or Clear Glaze

Refer to “Reproducing gloss using FC Paste Stain Glaze or Clear Glaze” in “Directions for Use A” on page 10.

Example of glazing

Reproducing gloss using self-glaze.

6 Additional application

MRP and Add-on

Refer to “ MRP and Add-on” in “Directions for use Margin and Stain” on page 15.

Full-zirconia restorations

(Restorations with a full-zirconia crown)

• See “Conditioning” on page 6 for directions on conditioning the zirconia surface and plaster model.

1 Application of Glaze and Stain, baking and finishing

Reproduce the appropriate gloss by using either method below:

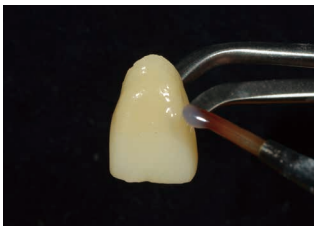
Reproducing gloss using FC Pastte Stain Glaze or Clear Glaze

Apply FC Paste Stain Glaze or Clear Glaze over the restoration until the applied layer is 30µm or more thick. Bake the restoration according to **Baking Schedule 16**. Apply an additional layer of Glaze or Clear Glaze, followed by re-baking, if there is insufficient gloss after the initial bake.
Apply FC Paste Stain and bake, if the shade needs to be adjusted. Different colors of FC Paste Stain may be mixed.
Use silicone points for final adjustment after baking. Finish the restoration by polishing.

Reproducing gloss using CZR PRESS Glaze*

Apply CZR PRESS Glaze over the restoration until the layer is 30µm or more thick. Bake the restoration according to **Baking Schedule 13**. Apply an additional layer of CZR PRESS Glaze, Followed by re-baking, if there is insufficient gloss after the initial bake.
Apply External Stain and bake, If the shade needs to be adjusted, according to **Baking Schedule 14**. Different colors of External Stain may be mixed and baked simultaneously.
Use silicone points for final adjustment after baking. Finish the restoraton by polishing.

*CZR PRESS Glaze is a CZR PRESS LF item.



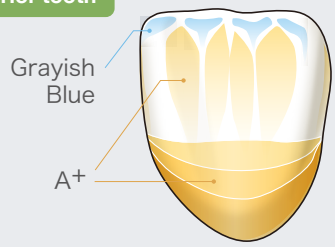
Another materials for full-zirconia restorations. (Baking Schedule 15)
FL Glaze FL Glaze is a colorless and transparent glaze powder containing high fluorescence.
VC Glaze VC Glaze is a colored glaze powder used to lower the value of full-zirconia restorations . It also contains fluorescence.
(The fluorescence of VC Glaze is less intense than FL Glaze.)

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
13	5	600	1112	600	1112	65	117	96	850	1562	850	1562	-	1	4
14	5	600	1112	-	-	50	90	0	-	-	850	1562	-	-	4
15	5	600	1112	600	1112	65	117	96	850	1562	850	1562	-	1	4
16	5	500*2	932	600*2	1112	45	81	96	750	1382	750	1382	-	1	4

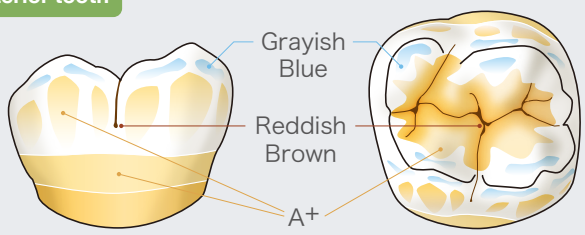
*1 96kPa = 72cmHg (29 inchesHg)
*2 Predrying temp. and start vacuum temp. are different.

Examples of staining with FC Paste Stain

Anterior tooth



Posterior tooth



- **Restorations (using a zirconia framework)**
  made using CZR PRESS LF (porcelain) and CZR PRESS (pressed ingot)
- **Restorations (anatomical zirconia coping)**
  made using CZR PRESS LF (porcelain)

1 Building-up, baking or pressing

Fabricate a crown using any of the following methods.

Restorations for using a zirconia framework

If CZR PRESS LF (porcelain) or CZR PRESS (pressed ingot) is used over a zirconia framework, build-up and bake or press according to the manufacture's instruction for use.

Restrations for using a anatomical coping

If CZR PRESS LF (porcelain) is used over an anatomical zirconia coping, build-up and bake according to the manufacture's instruction for use.

2 Morphological correction

Perform morphological corrections according to the procedure in 5 of Directions for use A on page 9.

3 Application of Glaze and Stain, baking and finishing

Reproduce gloss by using either method below:

Reproducing gloss using FC Paste Stain Glaze or Clear Glaze

When using FC Paste Stain Glaze or Clear Glaze, apply the material Thinly over the restoration and bake the restoration. For restorations made using CZR PRESS; however, apply the material until it is 30µm thick or thicker. Then bake the restoration. If there is insufficient glass after baking, apply additional application, and bake the restoration. If it is necessary to adjust the color, apply FC Paste Stain and bake the restoration.

Reproducing gloss using CZR PRESS LF External Stain Glaze

When using CZR PRESS LF External Stain Glaze, apply the material and bake according to the product's instructions for use. If it is necessary to adjust the color, apply FC Paste Stain and bake the restoration. After baking, finish the restoration by polishing the restoration surface and making morphological corrections using a silicone point.

Margin

Margin comes in a variety of shades, which include specialty choices, and is used to reproduce shades in the cervical area. Margin can also be used to correct thin porcelain spots in the margins of zirconia framework.
(This correction should be performed before applying Shade Base or Opacious Body to the framework.)

Attention **MRP may be used to adjust the marginal area of the restoration after glazing.**

Conditioning the plaster model

Apply a plaster setting accelerator on the marginal area of the abutment tooth where the plaster model comes in contact with the porcelain; let dry. Apply a porcelain separating agent (e.g. Magic Separator) to ensure that the porcelain can be easily separated from the model.

Building-up with Margin

Apply Margin to the cervical area of the zirconia framework. Make sure that the inside of the framework is clean; place the framework onto the abutment tooth.
Press Margin onto the cervical area with a spatula. Do not apply an excessive amount of Margin, as this will cause an unattractive opaque appearance.

First Margin baking

Remove the framework by gently twisting and pulling the framework upwards away from the die. Carefully examine the framework's inner surface . Eliminate any excess particles using a dry porcelain brush; bake the restoration according to **Baking Schedule 1**.
Apply more Margin and bake, if there has been any shrinkage.

Second layering and baking

Re-apply a porcelain separator to the plaster model. Apply Margin to the marginal area of the restoration, gently rubbing it into the recess. Remove the restoration from the die. Check the internal surface of the framework before baking the restoration according to **Baking Schedule 1**.Check to make sure that the framework and the porcelain join smoothly on the labial side and at the margins, after the second baking.

Correction with MRP

After glaze baking, use MRP to fill any gaps or hollows in the marginal area, if necessary.

Internal Stain

Internal Stain is used to reproduce the color of the dentin. In order to accomplish this, overlap different colors vertically and horizontally, dividing the baking process into two phases.

Attention **Internal Stain is meant exclusively for Internal staining and will not leave the porcelain surface glossy if used by itself. Before you use Internal Stain, make sure to bake the restoration. If the surface of the crown needs to be stained, use External Stain.**

Example of Use : After building-up dentin

Morphological correction

Smooth the porcelain surface so that Stain can be applied uniformly, after making morphological corrections. Sandblast the porcelain surface (at 0.2 MPa) with 50µm of alumina particles. Follow with ultrasonic cleaning using either acetone or alcohol.

First staining

Apply Internal Stain horizontally over the white bands, cervical areas and proximal surfaces. Bake the restoration according to **Baking Schedule 6**.

Second staining

Apply Internal Stain vertically over the hairlines and enamel cracks. Bake the restoration according to **Baking Schedule 6**.
These baking processes are performed to ensure the Internal Stain is well secured to the restoration surface. The porcelain on the restoration may look whitish at this stage. Wet the porcelain with IS Liquid to ascertain the actual color of the porcelain.

External Stain・FC Paste Stain

External Stain・FC Paste Stain is used to make color adjustments of the restoration surface and provide characterization details for the dentin area.

Check the color of the restoration after baking the glaze. Bake External Stain according to **Baking Schedule 10**, FC Paste Stain **Baking Schedule11**.

Tissue

Tissue comes in a total of 7 shades.

Shade	How to Use
Tissue 1	Reproduce general gingival color.
Tissue 2	Reproduce light gingival color.
Tissue 3	Reproduce dark gingival color.
Tissue 4	Mix with Tissue 1, 2 or 3 to enhance brightness. Suitable for adjustment of brightness in cases when the distance with the gingiva is wide.
Tissue 5	Used for areas where a opacious red tone is required.
Tissue 6	Used to reproduce bright pink.
Tissue 7	Used for areas where a strong red tone is required.

Baking Schedule	Dry-out Time	Predrying Temp.		Start Vacuum		Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold time		Cool Time
													with vacuum	In the air	
	min.	°C	°F	°C	°F	°C/min.	°F/min.	kPa *1	°C	°F	°C	°F	min.	min.	min.
1	5 *2	600 *2	1112 *2	600	1112	50	90	96	1000	1832	1000	1832	1	1	4
6	5	600	1112	-	-	50	90	0	-	-	900	1652	-	-	4
10	5	600	1112	-	-	50	90	0	-	-	930	1706	-	-	4
11 *6	5	600	1112	-	-	45	81	0	-	-	910	1670	-	-	4

*1 96kPa = 72cmHg (29 inchesHg)
*2 When Magic Former is used, the dry-out time should be 7 min, predrying temperature 700°C (1292°F).
*6 On the occasion of use to CZR Press or CZR Press LF surface, please refer to CERABIEN™ ZR FC Paste Stain IFU (Instructions for Use).

Luster

Use Luster instead of or in combination with Translucent to reproduce the surface texture and color of the enamel.

Attention

Cases where the use of Luster is not recommended:

- **If the tip of a zirconia framework is too close to the incisal edge of the porcelain.**
- **If the occlusal surface of a molar is not fully covered by porcelain.**
- **If the porcelain is extremely thin, causing the reflection to give too opaque an effect.**

In the above cases, the usual combination of Enamel and Translucent Porcelain should be used to produce a more natural appearance.

Shade	How to Use
LTx	Higher translucency and opal effect than LT_0. For a highly translucent incisal area. Use this alone or as a mixture with other Luster shades.
LT_0	Used mainly for a highly translucent incisal edge and for the simulation of highly translucent enamel (likely to be seen through the dentin).
LT_1	Used for areas built-up with Translucent T_1. Effective for achieving the brightness of natural tooth enamel.
LT Super Luster	Highest opal effect than other Luster shades. For reproducing bright enamel zone due to a the strong light reflection. Use this alone or as a mixture with other Luster shades .
ELT_1	Used when the target shade is EW/EWY.
ELT_2	Used when the target shade is EW_{00}/EW_0.
ELT_3	This is the brightest of the ELTs. Suitable for EW shades (EW/EWY/EW_{00}/EW_0).
LT Natural	Used mainly on incisal edges and proximal surfaces, to reproduce a high level of translucency, as seen especially among the elderly.
LT Super Gray	More gray than LT Natural. Useful for reducing brightness on incisal edges and for creating beautiful contrast effects. Use this alone or as a mixture with another shade of Luster or Translucent Tx.
T Blue	Used mainly for the incisal edges of young people's teeth, to reproduce their pale blue and youthful translucency.
LT Royal Blue	More blue and translucent than Aqua Blue1. For reproducing a blue zone.Use this alone or as a mixture with other Luster shades.
Aqua Blue 1	Somewhat bluer than T Blue. Used to reproduce the blue zone. This shade is used alone or mixed with another shade of Luster or Translucent Tx.
Aqua Blue 2	Somewhat bluer than T Blue, with a slight gray cast. Used to reproduce the blue zone at a lower tone than Aqua Blue 1. This shade is used alone or mixed with another shade of Luster or Translucent Tx.
LT Yellow	Used to reproduce a light "HALO EFFECT", to show depth in the central occlusal surface. Apply LT Yellow over Mamelon shade to suppress the orange tone.
Incisal Aureola	Used to reproduce the "HALO EFFECT" caused by the full reflection of light on the incisal edge.
Sun Bright	Used to reproduce the orange tone on the incisal edge of enamel, seen among the middle aged and elderly. Used also to reproduce a deeper orange or amber enamel color.
LT Coral	Pale pink color. For adding pink touch to cervical, occlusal and incisal areas.
Creamy Enamel	Used mainly on the cusps and ridges of molars, and occasionally on the area from the mesial and distal proximal surfaces at the incisal edge of anterior teeth, to the area near the corners of the incisal edge.
Creamy White	Used to reproduce a dense, milky effect, mixed with another shade of Luster.

Clear Cervical

Use Clear Cervical to reproduce internal coloration resembling the natural tooth without very much change to the chroma.

Shade	How to Use
CCV-1	Used for the cervical area, to reproduce brighter shades (A1 to A3)
CCV-2	Used for the cervical area, to reproduce darker shades (A3.5 to A4)
CCV-3	Used for the cervical area, in cases where the root is exposed or the crown is long
CCV-4	1. When more red is required than can be reproduced by CCV-3. 2. Used for deep fossa on the lingual sides of anterior teeth

Example of how to use Luster

After building up dentine, applying Internal Stain

- Interproximal : Incisal Blue 2
- Middle of Incisal : Cervical 2
- White Band : White + Bright
- Enamel Crack : White + Mamelon Orange 1
- Hair Line : Earth Brown

Apply the mixture of Tx and LT Natural to both proximal surface Apply the mixture of LT_0 and Tx to between mesial mamelon and mamelon.

Apply Creamy Enamel to white band near the central part of the crown.

Apply Sun Bright to middle of incisal area and LT_1 over the entire crown except the cervical area.

Apply Clear Cervical CCV-2 to cervical area and LT_1 to interproximal cover LT Natural.

Baking and polishing.

Color Combination Table

Target shade	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1
Shade Base	SBA1	SBA2	SBA3	SBA3.5	SBA4	SBB1	SBB2	SBB3	SBB4	SBC1
Margin	MA1	MA2	MA3	MA3.5	MA4	MB2+ MDL (1:1)	MB2	MB3	MB4	MC2+ MDL (1:1)
Opacious Body	OBA1	OBA2	OBA3	OBA3.5	OBA4	OBB1	OBB2	OBB3	OBB4	OBC1
Cervical (+Body)	-	CV-1+ A2B (1:2)	CV-1+ A3B (1:1)	CV-1+ A3.5B (1:1)	CV-1	-	CV-2+ B2B (1:2)	CV-2+ B3B (1:1)	CV-2	-
Body	A1B	A2B	A3B	A3.5B	A4B	B1B	B2B	B3B	B4B	C1B
Enamel	E2		E3			E1	E2	E3		E2
Translucent/Luster	T1 ／ LT1									

Color Combination Table

Converting VITA™ 3D-Master™ Shades to Noritake Value Shades

VITA™ 3D-Master™ Shade	0M1	0M2	0M3	1M1	1M2	2L1.5	2L2.5	2M1	2M2	2M3	2R1.5	2R2.5	3L1.5
Noritake Value Shade	-	-	-	NV1110	NV1120	NV2015	NV2025	NV2110	NV2120	NV2130	NV2215	NV2225	NV3015
The Ideal Frama Shades	Non Colored (White)					A1, B1, B2							
Shade Base *1	SBNW0	SBNW0	SBNW0+ SBNW0.5 (1:1)	SBC1	SBA1	SBB2	SBB2	SBC1	SBB2	SBB3	SBA1	SBA2	SBB3+ SBC2 (1:1)
Margin	MNW0	MNW0.5	MNW0.5	MA1	MA1	MB2	MB2+ MD4 (1:1)	MC1	MB2	MB3	MA2	MA2	MC2
Body	NW0B	NW0.5B	NW0.5B	1110B	1120B	2015B	2025B	2110B	2120B	2130B	2215B	2225B	3015B
Opacios Body	-	-	-	OB1110	OB1120	OB2015	OB2025	OB2110	OB2120	OB2130	OB2215	OB2225	OB3015
Enamel	Silky E2			E1									
Translucent/ Luster													

VITA™, 3D-Master™ and 0M1-5M3 are trademarks of VITA Zahnfabrik H. Rauter GmbH & Co.
*1 In case of masking Zirconia frameworks

C2	C3	C4	D2	D3	D4	NP1.5	NP2.5
SBC2	SBC3	SBC4	SBD2	SBD3	SBD4	SBNP1.5	SBNP2.5
MC2	MC4+ MDL (1:1)	MC4	MD3+ MDL (1:1)	MD3	MD4	MNP1.5	MNP2.5
OBC2	OBC3	OBC4	OBD2	OBD3	OBD4	OBNP1.5	OBNP2.5
CV-3+ C2B (1:2)	CV-3+ C3B (1:1)	CV-3	CV-4+ D2B (1:2)	CV-4+ D3B (1:1)	CV-4	-	CV-1+ NP2.5B (1:2)
C2B	C3B	C4B	D2B	D3B	D4B	NP1.5B	NP2.5B
E3			E2	E3		E2	

EW00	EW0	EW	EWY	NW0	NW0.5
SBWhite			SBB1	SBNW0	SBNW0.5
MDL		MNW0+ MDL (1:1)	MNW0+ MDL (2:1)	MNW0	MNW0.5
-	-	-	-	-	-
-	-	-	-	-	-
EW00B	EW0B	EWB	EWYB	NW0B	NW0.5B
Silky E1		Silky E2			
ELT2		ELT1		T1 ／ LT1	

3L2.5	3M1	3M2	3M3	3R1.5	3R2.5	4L1.5	4L2.5	4M1	4M2	4M3	4R1.5	4R2.5	5M1	5M2	5M3
NV3025	NV3110	NV3120	NV3130	NV3215	NV3225	NV4015	NV4025	NV4110	NV4120	NV4130	NV4215	NV4225	NV5110	NV5120	NV5130
A2, A3						C1, D2							C1, D2		
SBB3	SBC1	SBB2	SBB3	SBA1	SBA3	SBC2	SBB3	SBC2	SBB3	SBB4	SBA2	SBB4	SBC2	SBA4	SBA4
MB3+ MD4 (1:1)	MC2	MB3	MB4	MA3+ MC2 (1:1)	MA3+ MC2 (1:1)	MA4+ MC2 (1:1)	MA4+ MB3 (1:1)	MC2	MA4	MA4	MC2+ MD3 (1:1)	MA4	MA4	MA4	MA4
3025B	3110B	3120B	3130B	3215B	3225B	4015B	4025B	4110B	4120B	4130B	4215B	4225B	5110B	5120B	5130B
OB3025	OB3110	OB3120	OB3130	OB3215	OB3225	OB4015	OB4025	OB4110	OB4120	OB4130	OB4215	OB4225	OB5110	OB5120	OB5130
E2															
T1 ／ LT1															

Baking Schedule

	Baking Schedule	Porcelain type	Dry-Out Time	Predrying Temperature		Start
			min.	°C	°F	°C
Restorations using a zirconia framework or Anatomical zirconia coping	1	Margin	5 *2	600 *2	1112 *2	600
	2	Wash bake	5	600	1112	600
	3	Shade Base	5	600	1112	600
	4	Opacious Body *3	7-10	600	1112	600
	5	Cervical / Body / Enamel *3	7-10	600	1112	600
	6	Intenal Stain	5	600	1112	-
	7	Translucent / Luster / Clear Cervical / Tissue *3	7-10	600	1112	600
	8	Minor Adjustment *4	7	600	1112	600
	9	Self Glaze	5	600	1112	-
	10	External Stain (including Glaze) / CZR PRESS Glaze *5	5	600	1112	-
	11	FC Paste Stain (including Glaze, Clear Glaze) *6	5	600	1112	-
	12	MRP & Add-on	5	600	1112	-
Full-zirconia-restorations	13	CZR PRESS Glaze *5	5	600	1112	600
	14	External Stain	5	600	1112	-
	15	External Stain FL Glaze, VC Glaze	5	600	1112	600
	16	FC Paste Stain	5	500 *7	932	600 *7

Attention **The above program is only a guideline. Baking temperature may vary due to different furnace.**

*1 96 kPa = 72 cmHg (29 inchesHg)

*2 When Magic Former is used, the dry-out time should be 7 min, predrying temperature 700°C (1292°F).

*3 The baking conditions are established on the assumption that a single crown is baked. Adjust the dry-out time and baking temperature when baking bridges.

*4 This is baking temperature for cases when Opacious Body, Cervical, Body, Enamel, Translucent, Luster, Clear Cervical, Mamelon, Modifier and Tissue are applied additionally.

*5 CZR PRESS Glaze is a CZR PRESS LF item.

*6 On the occasion of use to CZR Press or CZR Press LF surface, please refer to CERABIEN™ ZR FC Paste Stain IFU (Instructions for Use).

*7 Predrying temp. and start vacuum temp. are different.

Vacuum	Heat Rate		Vacuum Level	Release Vacuum		High Temperature		Hold Time		Cool Time
								with vacuum	in the air	
°F	°C / min.	°F / min.	kPa*1	°C	°F	°C	°F	min.		min.
1112	50	90	96	1000	1832	1000	1832	1	1	4
1112	45	81	96	930	1706	930	1706	-	1	4
1112	45	81	96	930	1706	930	1706	-	1	4
1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4
1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4
-	50	90	0	-	-	900	1652	-	-	4
1112	45	81	96	930-940	1706-1724	930-940	1706-1724	-	1	4
1112	45	81	96	930	1706	930	1706	-	0.5	4
-	50	90	0	-	-	930	1706	-	0.5	4
-	50	90	0	-	-	930	1706	-	-	4
-	45	81	0	-	-	910	1670	-	-	4
-	45	81	0	-	-	880	1616	-	-	4
1112	65	117	96	850	1562	850	1562	-	1	4
-	50	90	0	-	-	850	1562	-	-	4
1112	65	117	96	850	1562	850	1562	-	1	4
1112	45	81	96	750	1382	750	1382	-	1	4

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- Before using this product, be sure to read the Instructions for Use supplied with the product.
- The specifications and appearance of the product are subject to change without notice.
- Printed color can be slightly different from actual color.

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