kuraray

Noritake

TECHNICAL GUIDE

KATANA™ ZIRCONIA BLOCK

STML Super Translucent Multi Layered
ST Super Translucent

KATANA™ Zirconia Block

Use our new KATANA™ Multi-Layered Zirconia Block with Dentsply Sirona's CEREC System and fabricate full natural zirconia restorations in 45 Minutes.* Full contour Zirconia prosthectics is now Chair Side.

*In the case of crown

MULTI LAYERED

For optimal adhesion
PANAVIA V5

SELF-ADHESIVE RESIN CEMENT
PANAVIA SA Cement Plus Automix

ZIRCONIA RESTORATIONS SIMILAR TO NATURAL TOOTH ENAMEL BY SPEED SINTERING

The collaboration of Kuraray Noritake Dental's superior materials technology and Dentsply Sirona's CEREC SpeedFire*1 now makes it possible to speed sintering process full zirconia restorations (30 minutes).

Intraoral scanning
Designing *2

Milling
15 minutes *3

Sintering
30 minutes *3

***1** This product is exclusively for use with CEREC ***2** CEREC software 4.5.2 is necessary ***3** In a case involving a crown(dry mill)

THE MULTI-LAYERED STRUCTURE IN GRADUATED SHADES

The multi-layered KATANA™ Zirconia Block consists of four layers Zirconia in graduated shades allowing the chair side fabrication of natural-tooth colored restorations. Eliminating a time-consuming and difficult situation of staining the restoration.

Enamel Layer

Transition Layer 1

Transition Layer 2

Body (Dentin) Layer

MULTI LAYERED **Super Translucent Multi Layered**

*** The logo "MULTI LAYERED" expresses original production technology of KATANA™ multi-layered materials. * ST is not multi-layered material.**

RESTORATION FABRICATION PROCESS

1 TOOTH PREPARATION

2 SHADE SELECTION

3 INTRAORAL SCANNING / DESIGNING / BLOCK SIZE SELECTION

4 MILLING

5 SINTERING / MORPHOLOGICAL CORRECTION

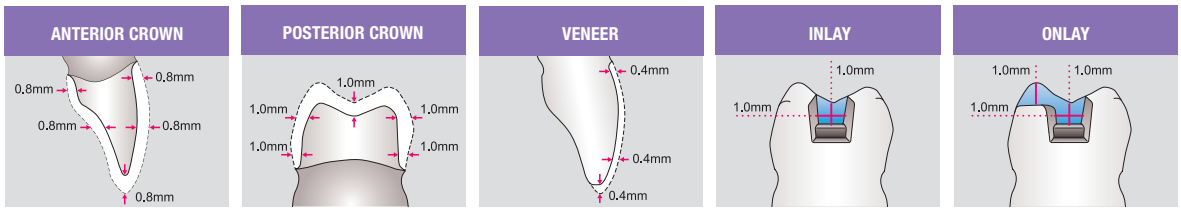
6 FINISHING

7 CEMENTATION

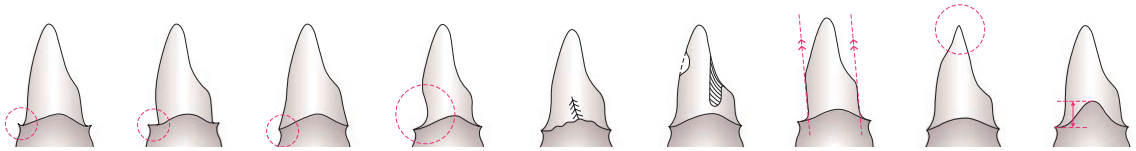
1 TOOTH PREPARATION

It is crucial to keep a minimum wall thickness for a successful restoration.

MINIMUM ZIRCONIA WALL THICKNESS



CONTRAINDICATIONS



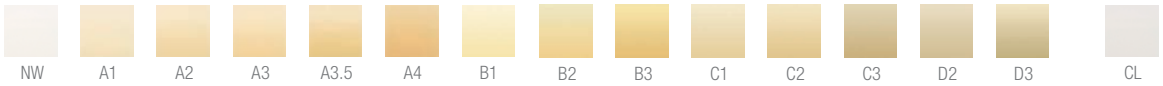
J-margin | Deep Shoulder | Knife Edge | Undercut | Rough Margin | Grooves | Parallel Axis | Sharp Incisal Top | Height Difference

2 SHADE SELECTION

Select the right shade, paying attention to the shade of the abutment.

STML
Super Translucent Multi Layered

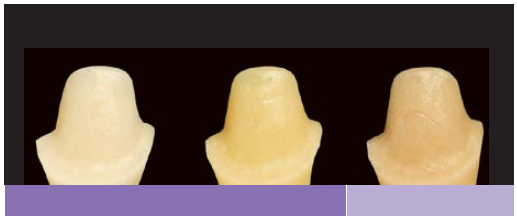
ST
Super Translucent



POINTS TO KEEP IN MIND WHEN SELECTING SHADES

1 KATANA™ Zirconia Block is so highly translucent that a prosthesis fabricated with this material is affected by the color of the abutment that will be behind it after it is placed in the mouth. Select the right block shade, with reference to the following descriptions. It is advisable to use care in the selection of the correct shade for the case you are treating, in particular if a metal abutment needs to be completely masked.

ABUTMENT COLOR EXAMPLES



Select the same shade as the shade you need.

The color of the prosthesis may be darkened due to the effect of the abutment color. **Select a shade number one level lower on the scale (brighter)** than the color you need.
(It will be necessary to use stain with it.)

2 There can be cases when the prosthesis might be color matched with surrounding teeth **by selecting a shade number one level higher on the scale (darker) or lower (brighter) than the color you need.**
Select a suitable shade by referring to the following:

Select a shade number:
ONE LEVEL LOWER (BRIGHTER)

When the prosthesis is finished by polishing:
The final colors of full-zirconia prostheses may differ if they are finished by glazing or by polishing, even if the same shade is used. KATANA™ Zirconia Block is designed to deliver the specified color when finished by glazing. The final color will be darker when it is finished by polishing.

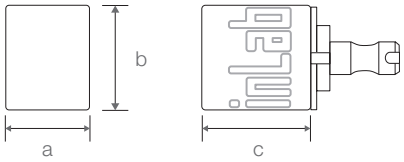
When the prosthesis has a thick wall:
The final color of prostheses with thick walls will be darker than the shade you selected.

Select a shade number:
ONE LEVEL HIGHER (DARKER)

Posterior restorations:
Zirconia has a tendency to look brighter than the color you probably want (and so to stand out starkly) in the posterior region due to its high refractive index.

3 INTRAORAL SCANNING / DESIGNING / SIZE SELECTION

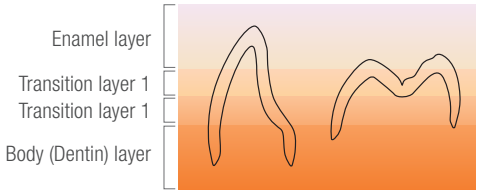
Scan the abutment using an intraoral scanner to design the prosthesis. Select the block size that suits the size of the prosthesis you have designed. After baking, the prosthesis will shrink to about 80 percent of its original size. **Size 12Z is suitable for a prosthesis with a crown length of 12 mm, and 14Z is good for a prosthesis with a crown length of 14 mm.** For STML, the side stamped “inLab” is the Body layer and the layer on the opposite side is the Enamel layer.



Size*		a (height)	b (width)	c (length)
12Z	Before Sintering	15.3 mm	19.2 mm	20.2 mm
14Z	Before Sintering	17.8 mm	19.2 mm	20.2 mm

Block sizing may have individual slight differences, but will be adjusted automatically by the software
* Block Size STML: 12Z, 14Z / ST(CL): 12Z only

POINT TO BLOCK SELECTION



(Example)
If you want to fabricate a 7 mm long posterior crown, select size 12Z, not 14Z; this will result in thinner Enamel and Body layers.

4 MILLING

Observe the conditions below while dry milling the block you have selected. After milling, remove the prosthesis from the milling machine. Cut off the holder and remove any excess by using a diamond bur, etc.

1. Remove any cuttings from the prosthesis using compressed air or a soft brush.

2. **Dry milling is recommended.** If wet milling/grinding is performed by using cooling water contaminated by silica-based glass ceramics (lithium disilicate glass, etc.), the translucency of the zirconia may be reduced after baking. Before wet milling/grinding, clean the milling/grinding chamber, cooling water tank and filter insert. The cooling water must be changed in order to assure optimum results.

5 SINTERING / MORPHOLOGICAL CORRECTIONS

Sinter the prosthesis in a CEREC SpeedFire furnace, observing the conditions given below.
Then, make morphological corrections (adjustment of contacts on proximal surfaces and occlusion).

1. The prosthesis is very hot immediately after sintering. Do not touch the prosthesis with your bare hands when removing it from the furnace.

2. Make morphological corrections carefully using a diamond bur or silicone points containing diamond particles. Use a copious spray of water or work on the prosthesis while it is well wet. Be careful not to apply undue force, because this might cause a fracture, break or micro-cracks from a local spot heating.

3. It is recommended to apply the Glaze of CERABIEN™ ZR FC Paste Stain at a thickness of 30 to 40 µm. Using articulation paper, make morphological corrections while remembering the need to leave space for applying Glaze*.

4. After morphological correction, make sure there are no cracks.

* There is no need to leave space for applying Glaze if the whole surface of the prosthesis is polished as the final finish.

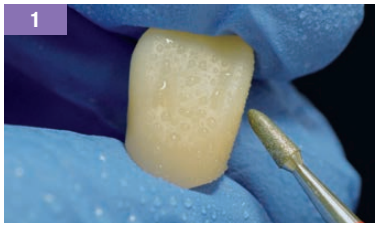
6 FINISHING

Finish the prosthesis by: refining the surface texture, polishing areas in contact with the opposing tooth, and applying Glaze of CERABIEN™ ZR FC Paste Stain*, followed by baking.

* If you use a porcelain other than CERABIEN™ ZR FC, check for the suitability of the porcelain.

FINISHING WITH CERABIEN™ ZR FC PASTE STAIN

1



Create a surface texture over the entire crown under running water or wet condition.

2

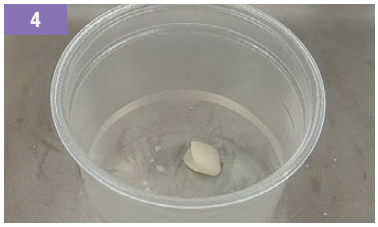
Polish areas in contact with opposing tooth*. (For finishing with polishing alone, complete entire crown while polishing.)

* Refer to "Polishing method" given below.

3

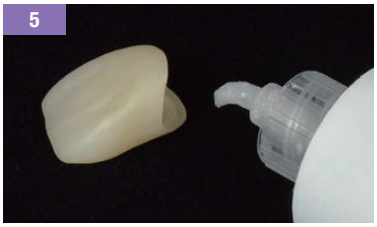
Alumina sandblast the crown surface and interior other than polished areas (50-70 µm, 0.2 MPa).

4



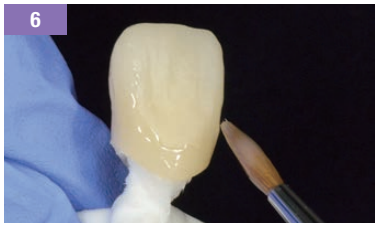
Clean the prosthesis using an ultrasonic cleaner in alcohol or acetone, or steam cleaner.

5



Secure the prosthesis to a stand or metal pin.

6



Apply Glaze and bake.

PRECAUTIONS TO TAKE WHEN FINISHING

1 Never try to finish a warm prosthesis, or when it is not cooled sufficiently; otherwise, it will cause cracks.

2 Polish the zirconia surface which might contact to the opposing tooth.
For, zirconia could become exposed on the glaze layer during its long-term wearing.

3 Use stands or metal pins when baking the Glaze.

POLISHING METHOD

To polish the areas of the prosthesis that are in contact with the opposing tooth or to finish the entire surface by polishing without using Glaze, refer to the procedures on the right side.

Polish using silicone points containing diamond particles*.

* It is good practice to use three types of silicone points (coarse, regular and fine, respectively) to achieve good luster.

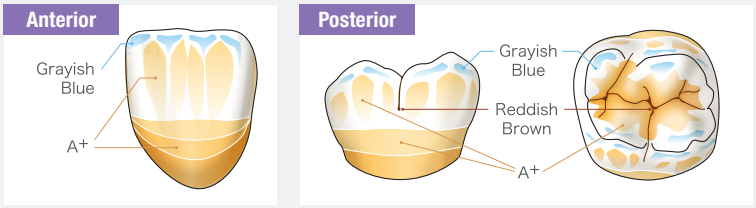
Finish by polishing, using polishing paste containing diamond particles, such as Pearl Surface Z.

Completion.

STAINING METHOD

Excellent color adjustment and translucency can be achieved by staining, using CERABIEN™ ZR FC Paste Stain.

* If you use a porcelain other than CERABIEN™ ZR FC, check for the suitability of the porcelain.



Example of staining using CERABIEN™ ZR FC Paste Stain

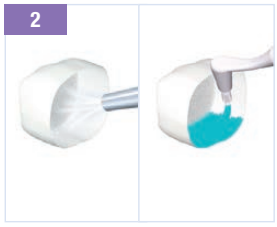
7 CEMENTATION

For zirconia bonding, we can offer you the best solution with PANAVIA™ cements. PANAVIA™ V5 and PANAVIA™ SA Cement Plus is well documented in literature to chemically bond to Zirconia and provide high bond strengths and durability.

BONDING PROCEDURE USING PANAVIA™ V5

Check the fit and color of the prosthesis using the TRY-IN paste of PANAVIA™ V5. Stain as necessary*.

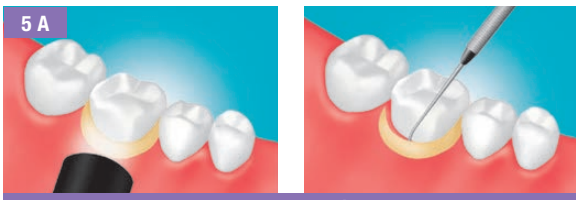
* Refer to the section "Staining method" given below.



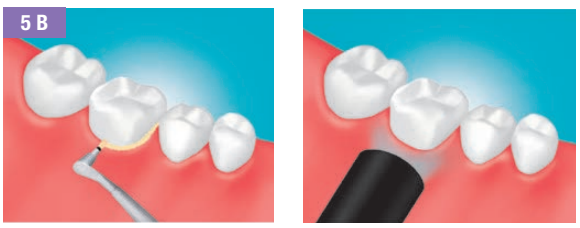
Alumina sandblast the internal surface (30-50 µm 0.1-0.4MPa), clean and dry. Apply CLEARFIL™ Ceramic Primer Plus to the internal surface and dry.

Apply PANAVIA™ V5 Tooth Primer to the abutment and cavity, rub for 20 seconds and dry.

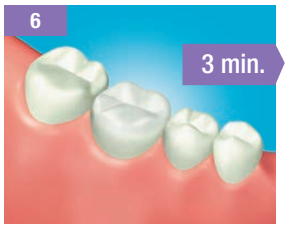
Apply PANAVIA™ V5 paste to the internal surface and seat the prosthesis into place.



A. Polymerise for 3 to 5 seconds using a light curing device and remove the excess material by means of an appropriate instrument.



B. Remove the excess cement using a small brush and irradiate the margins with a light-curing unit. Take care: always apply method B for opaque restorations and for opaque colours.



Final curing (3 min.)

Check for occlusion and adjust*.

* It is good practice to adjust using silicone points containing diamond particles; polish using polishing paste containing diamond particles to achieve good luster.

BASIC PROCEDURE FOR ZIRCONIA RESTORATIONS WITH
PANAVIA™ SA Cement Plus Automix

1

Clean and dry the tooth surface, and then trial fit the zirconia restoration.

2

Blast with alumina powder (30-50µm, 0.1-0.4MPa / 14-58 PSI / 1-4kgf/cm^2), then ultrasonic clean and dry.

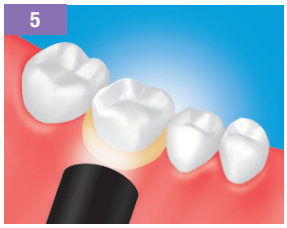
3

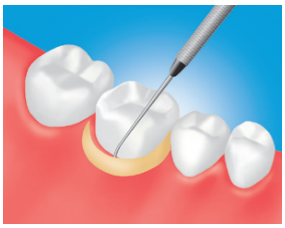
Apply over the prosthetic restoration of the entire tooth surface within the cavity.

4

Place the crown.

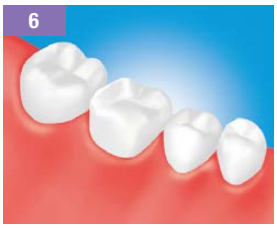
5





Light cure for 2-5 seconds or chemical-cure for 2 to 4 minutes, then remove the exess cement.

6



Maintain isolation for 5 minutes.

KATANA™ Zirconia Block

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*In the case of crown

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For optimal adhesion
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SELF-ADHESIVE RESIN CEMENT
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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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