TECHNICAL GUIDE
KATANA™ ZIRCONIA
MULTI-LAYER SERIE
HIGH ESTHETIC WITH KATANA ZIRCONIA

New series which feature translucency similar to natural teeth expected to see hits.

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RESTORATION PROCESS

1. Series Selection
2. Shade Selection
3. Disc Thickness Selection
4. Framework Design and Milling Process
5. Sintering and Adjusting
6. Finishing Methods

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Four-Layer Structure:

- Lower Layer (65 %)
- Framework Layer (25 %)
- Body Layer (9 %)

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Gaze
Glazing and Staining
Build-ups
Completion
1
SERIES SELECTION

Each series has different translucency and mechanical properties. By choosing the right series, you can successfully restore a wide range of cases. Each material series is anterior to posterior stepwise:

**UTML**
- Ultra Translucent Multi-Layered ideal for anterior crowns and veneers, impossible to posterior single crowns.

**STML**
- Super Translucent Multi-Layered ideal for up to 4 unit posterior bridges with a well-balanced combination of translucency and polished hardness which reproduces esthetic smile and dentin effects.

**ML & HT**
- High translucency strength bridges is suitable for single and frameworks and long span bridges.

**RECOMMENDATIONS FOR EACH SERIES**

* Recommended Application

VTML
- Veneer
- Inlay/Onlay
- Anterior Crown
- Full Contoured Crown
- Single Bridge
- Long span Bridge

VTML, STML, ML & HT
- Body (Dentine) Layer

**High translucency through all the disc layers.**

Color of Shade Guide

**UTML SHADES**

There are two different shade groups: “Standard Shades” and “Optical Shades,” channel Shading have reduced esthetics in the upper layers which allow you to enhance the translucency appearance of the cervical area, and decrease, eliminating external shade characteristics.

**ML & HT SHADES**

ML & HT Layers is suitable for full contour crowns and bridges, and HT (High Translucent) Multilayered Shading is suitable for frameworks.
SHADE SELECTION

5. Range of adolescent color varies by translucency of the crown.

RECOMMENDATIONS FOR SHADE SELECTION

1. Circles with high reflectance index have a brighter on the anterior area, for posterior indication using UF, ST, or HT, always use shade lighter than the largest shade to achieve a gradual transition with surrounding teeth.

2. Even after the same shade is used, the grinding and polishing finish will result in different color evaluation.

For glazing, select the largest shade color and for polishing, it tends to become one shade darker. Therefore, select one lighter shade than the largest shade color.

For polishing, select the largest shade color, and for glazing, it tends to become lighter. Therefore, adjust the color by successive glazing.

3. DISC THICKNESS SELECTION

Multi-Layered UFRL, STRL, and NL disc series in three thicknesses: 16, 18, and 22 mm. While designing the thickness, thickness must not exceed 18 mm. Therefore, avoid the right thickness to achieve the appropriate gradual transition between the crown length the reacts to the body shade.
FRAMEWORK DESIGN AND MILLING PROCESS

ANTERIOR CROWN, VENEER, POSTERIOR CROWN, INLAY, ONLAY

It is crucial to leave a minimum wall thickness for a successful restoration, and keep in mind:

1. The removal of a thin layer of tooth may lead to the development of a fracture line.
2. The restoration should be as thin as possible and avoid overcontouring.
3. Retentive forms such as grooves, Chamfers, and undercuts improve retention and stability.

MINIMUM WALL THICKNESS OF ZIRCONIA

- UML: 0.5 mm
- STL: 0.3 mm
- ML & HT: 0.3 mm

BRIDGE / CONNECTOR CROSS SECTION

Follow the formula of application and thicknesses:

1. 3D CAD model of the bridge connector, cross-sections, and contours.
2. UML and STL are not suitable for a conventional pontic bridge.
3. ML & HT are limited to 0.5 mm at the connector.
4. Pedestal 2-3 mm at the connector.

MINIMUM CONNECTOR CROSS SECTION
SINTERING AND ADJUSTING

Follow the sintering technique. After sintering adjust inside of the framework and height:

1) Be sure that materials is fully compacted to avoid cracking.
2) STML and STML, buccal strength are not as strong as ML and HT. Therefore wear special attention when using excess force or work under running water for to inside and buccal adjustment.
3) Use "Chock Block" after adjustment to make sure no cracking occurred.

FINISHING METHODS

COMPATIBLE MATERIALS

Ecoplus™ Z2
Eco Press LF
F1 Glass, F2 Glass, Internal Stain, Internal Stain, LF, Cottle, etc.

Warning: Do not use EcoPress™ Z2 and CSR Press is quicker for build-up.
Do not use Eco Press LF input, L-paste, Cobalt White input for STML and STML.

CRUCIAL TECHNICAL POINTS OF FINISHING

1) Polish contact area with opening both and clean remnant by using an ultrasonic cleaner for treatment benefits.
2) After sintering and adjustment, clean remnant thoroughly.
3) When plating, eutectic and activating process should be a distinct step. Distinct activating steps per product; therefore review technical instructions.
4) Do not submerge until cool down to avoid potential cracking.
5) Select the sintering factor that corresponds to the alignment and coloring at 1,000°F (540°C).

SINTERING PROGRAM SETTING

<table>
<thead>
<tr>
<th>HTM</th>
<th>STML</th>
<th>ML &amp; HT</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Temperature</td>
<td>1,020°F / 550°C</td>
<td>1,020°F / 550°C</td>
</tr>
<tr>
<td>Start Time</td>
<td>2 hours</td>
<td>2 hours</td>
</tr>
<tr>
<td>Rate of Temperature Increase</td>
<td>16°F / 9°C/ min</td>
<td>16°F / 9°C/min</td>
</tr>
<tr>
<td>Rate of Temperature Decrease</td>
<td>16°F / 9°C/min</td>
<td>16°F / 9°C/min</td>
</tr>
</tbody>
</table>

6.1 GLAZING

The multi-layered glazing is designed to achieve aesthetic results by using glazing method at final process.

GLAZING METHOD

GLAZING MATERIALS: Select A, B or C Method according to the material

<table>
<thead>
<tr>
<th>No.</th>
<th>Product</th>
<th>Shade</th>
<th>High Temperature</th>
<th>Start Time</th>
<th>Rate of Temperature Increase</th>
<th>Rate of Temperature Decrease</th>
<th>High Temperature</th>
<th>Start Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>LB Press</td>
<td>White</td>
<td>1,070°F / 580°C</td>
<td>4 hours</td>
<td>16°F / 9°C/ min</td>
<td>16°F / 9°C/ min</td>
<td>1,070°F / 580°C</td>
<td>4 hours</td>
</tr>
<tr>
<td>B</td>
<td>LB Press</td>
<td>White</td>
<td>1,070°F / 580°C</td>
<td>4 hours</td>
<td>16°F / 9°C/ min</td>
<td>16°F / 9°C/ min</td>
<td>1,070°F / 580°C</td>
<td>4 hours</td>
</tr>
<tr>
<td>C</td>
<td>LB Press</td>
<td>White</td>
<td>1,070°F / 580°C</td>
<td>4 hours</td>
<td>16°F / 9°C/ min</td>
<td>16°F / 9°C/ min</td>
<td>1,070°F / 580°C</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

MIX GLAZE AND EXTERNAL STAIN METHOD

Select A, B or C method according to the glass material

<table>
<thead>
<tr>
<th>No.</th>
<th>Product</th>
<th>Shade</th>
<th>High Temperature</th>
<th>Start Time</th>
<th>Rate of Temperature Increase</th>
<th>Rate of Temperature Decrease</th>
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</tr>
</tbody>
</table>
6.2 GLAZING AND STAIN METHOD

After glazing, applied staining will enhance translucency appearance. The UMA, stainer, glass, and多元化 stain should be applied to the surface which allows you to enhance the translucency appearance of the finished area, as desired, by setting external stain characteristics.

TECHNICAL POINTS OF STAINING

1) In addition to the features of transparent paste of the multi-component, applied stain with a knife direction will create three-dimensional appearance.
2) Apply glue (blue on the interior area, red in E, En, etc.), on the marbled area to enhance external features and translucency.

EXAMPLE OF EXTERNAL STAIN

<table>
<thead>
<tr>
<th>BROWN</th>
<th>GRAY</th>
<th>1:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, C, D, E, etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| External stain horizontally for adjusting the shape
| External stain vertically to show external tooth characteristics

6.3 PORCELAIN BUILT-UP METHOD

Higher aesthetic appearance will be created by applying under porcelain over the model.

TECHNICAL POINTS OF BUILD UP

1) For UMA, UMA, and UMA, it is crucial to ensure the transparent vessel. Bleeding is recommended on page 6 “Framework Design and Milling Process”, and apply only on the tip on the external part.
2) Polishing block in the external side is recommended.

EXTERIOR STAIN: Select D or E according to the material

<table>
<thead>
<tr>
<th>Material</th>
<th>Product</th>
<th>Resin</th>
<th>Light</th>
<th>1/2 Light</th>
<th>1/2 Dark</th>
<th>Black</th>
<th>Green</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMA, UMA</td>
<td>205-8S</td>
<td>5</td>
<td>BLUE</td>
<td>2-3000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2051US</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>205-8S</td>
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FABRICATION PROCESS

Select layering material either Disply™ ZR or CER Press Ltd.

1) Create maximum structure under spraying water and cool air.
2) Design build-up and porcelain thickness.
3) Polish with the AOH material, which is used in the chair office.
4) Polish the AOH material on the surface of the polished area of the crown (3000, Polishing, Spray).
5) Clean the restoration using the blower, followed by a final polish at the chair office, or a laboratory.
6) Apply glaze, then heat (bake) (completed).

* Polishing block in the external side is recommended.
* The use of a small brush block is recommended for the final touchup of the external side.
6.3 PORCELAIN BUILD-UP METHOD

GERABEN™ ZR BAKING SCHEDULE

<table>
<thead>
<tr>
<th>No.</th>
<th>Product</th>
<th>Specimen Code</th>
<th>Temp (°C)</th>
<th>Time (min)</th>
<th>Venting Program</th>
<th>Shade</th>
<th>Root Type</th>
<th>Glaze Type</th>
<th>Multi-Color Build-Up</th>
<th>Color Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mode 4</td>
<td>9007110</td>
<td>850</td>
<td>2</td>
<td>500° C</td>
<td>6</td>
<td>M4</td>
<td>9007166</td>
<td>4</td>
<td>9007166/K4</td>
</tr>
<tr>
<td>2</td>
<td>Mode 4</td>
<td>9007310</td>
<td>850</td>
<td>2</td>
<td>500° C</td>
<td>6</td>
<td>M4</td>
<td>9007166</td>
<td>5</td>
<td>9007166/K4</td>
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CZR PRESS LF BAKING SCHEDULE

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APPLICATION WITH ANTERIOR PROSTHESSES MADE OF HIGHLY TRANSLUCENT KATANA™ ZIRCONIA

After preparing the abutments for an anterior bridge made of zirconia and bridge resin has become dry, polish the abutments with diamond discs. Use a finishing polish disc for zirconia (ZIRCONA 1112). After finishing, coat the abutments with a final finishing polish for anterior bridges (ZIRCONA 1112). After all finishing, the bridge is ready for use. If necessary, the abutments can be refined (ZIRCONA 1112).