1 CAD design

Indications
- Crowns
- Bridges with maximum one pontic between two crowns
- Inlays/onlays, veneers

Design parameters
The following design specifications must be fulfilled for the finished restorations:

<table>
<thead>
<tr>
<th>Wall thickness</th>
<th>Bridge connector cross section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior</td>
<td>≥ 0.8 mm</td>
</tr>
<tr>
<td>Posterior</td>
<td>≥ 0.8 mm</td>
</tr>
<tr>
<td></td>
<td>≥ 12 mm³</td>
</tr>
<tr>
<td></td>
<td>≥ 14 mm³</td>
</tr>
</tbody>
</table>

2 CAM positioning and scaling

Layer concept
The two upper zones are always 3 mm thick. The thickness of the body zone (8, 12 or 16 mm) varies with the disc height.

3 heights:
- 14 mm
- 18 mm
- 22 mm

Scale factor

3 Milling – 98 mm disc with step fits open zirconia dry mills

Default milling parameters

<table>
<thead>
<tr>
<th>Job</th>
<th>Feed (mm/min)</th>
<th>Step down (mm)</th>
<th>Step over (mm)</th>
<th>Spindle speed (RPM)</th>
<th>Carbide tool diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roughing</td>
<td>600</td>
<td>0.4</td>
<td>0.6</td>
<td>10,000</td>
<td>2</td>
</tr>
<tr>
<td>Rest material</td>
<td>600</td>
<td>0.3</td>
<td>0.3</td>
<td>30,000</td>
<td>1</td>
</tr>
<tr>
<td>Finishing inside 3D/occlusal</td>
<td>1,350</td>
<td>n.a./0.15</td>
<td>0.15</td>
<td>25,000</td>
<td>2</td>
</tr>
<tr>
<td>Finishing margin line 3D</td>
<td>500</td>
<td>n.a.</td>
<td>0.1</td>
<td>25,000</td>
<td>2</td>
</tr>
<tr>
<td>Finishing outside cavity</td>
<td>800</td>
<td>0.15</td>
<td>0.15</td>
<td>25,000</td>
<td>2</td>
</tr>
<tr>
<td>Fine finishing inside 3D</td>
<td>1,000</td>
<td>n.a.</td>
<td>0.12</td>
<td>20,000</td>
<td>1</td>
</tr>
<tr>
<td>Fissure machining</td>
<td>800</td>
<td>1</td>
<td>0.2</td>
<td>30,000</td>
<td>1</td>
</tr>
<tr>
<td>Fine fissure machining</td>
<td>500</td>
<td>0.5</td>
<td>0.15</td>
<td>30,000</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Before using the products described, please refer to the instructions for use provided with the product packages.
4 Green finishing

- Remove the sprues with a handpiece and a fine, cross-meshed hard metal milling tool
- Adjust and smoothen the surface with white universal polishers
- 3M™ Lava™ Esthetic Zirconia must not be used in combination with dyeing liquids

5 Sintering

- Positioning on an approx. 3 mm layer of sintering beads, e.g. 3M™ Lava™ Sintering Beads (Item No. 68594)
- Air circulation required, do not use closed trays
- Sintering parameters listed in the table must be set for sintering Lava Esthetic zirconia
- Make sure that the furnace can reach the required heating rates and maximum temperatures
- Calibration of the sintering furnace should be checked at regular intervals

| Heating         | 20°C/min to 800°C
|                 | 10°C/min to 1,500°C
| Holding time    | 120 min at 1,500°C
| Cooling         | Max. 15°C/min to 800°C
|                 | Max. 20°C/min to 250°C

6 Finishing after sintering

- Use a turbine at 30k–120k RPM or a fast-running handpiece at up to 30k RPM
- Water cooling is recommended
- Use only fine-grain diamonds ≤30 µm
- Smoothen ground areas with rubber polishers
- Make sure to maintain a minimum wall thickness of 0.8 mm

7 Stain and glaze

- Glaze restorations to achieve best match to selected shade
- Use low-temperature (< 900°C) glazes and stains for zirconia
- Vacuum during holding time is not recommended

8 Sandblasting

- Before sending to dentist:
  - Sandblast bonding surfaces with alumina, grain size 50 µm at 2 bars (30 PSI)
  - Clean with alcohol and dry with oil-free air
  - For crown and bridge cementation, 3M™ RelyX™ Unicem 2 Self-Adhesive Resin Cement is recommended

NOTE: Final shade achieved after glazing.

NOTE: Vacuum during hold time may cause color shift.