3M Science. Applied to Life.™

Lab Quick Start Guide | 3M™ Lava™ Esthetic

Esthetic Fluorescent Full-Contour Zirconia

- Cubic zirconia material
- High strength of 800 MPa*
- High translucency optimized for esthetic full-contour
- Gradient pre-shaded with true color match to VITA® Classic shades
- First zirconia with inherent toothlike fluorescence
- Available in eight shades and three heights

Item numbers (1 disc per pack)

	14 mm	18 mm	22 mm
Bleach	69319	69327	69335
A1	69320	69328	69336
A2	69321	69329	69337
A3	69322	69330	69338
A3.5	69323	69331	69339
B1	69324	69332	69340
C1	69325	69333	69341
D2	69326	69334	69342

* 3-point bending strength according to ISO 6872:2015; qualified for Type II, class 4; indications: crowns, bridges with one pontic between two crowns, inlays, onlays and veneers.

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:

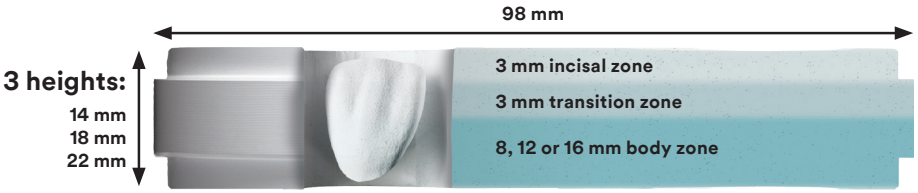
	Wall thickness	Bridge connector cross section
Anterior	≥ 0.8 mm	≥ 12 mm²
Posterior	≥ 0.8 mm	≥ 14 mm²

! Maintain **0.8 mm** minimum wall thickness

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.



Scale factor

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

Default milling parameters

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

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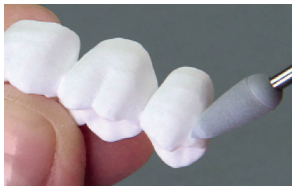
4 Green finishing



- 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

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

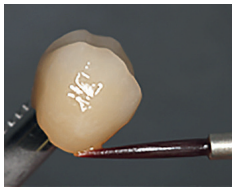
- Make sure that the furnace can reach the required heating rates and maximum temperatures
- Calibration of the sintering furnace should be checked at regular intervals

6 Finishing after sintering

NOTE: Final shade achieved after glazing.

- 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

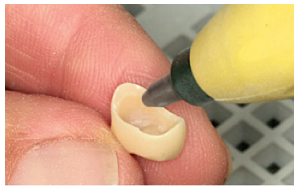
7 Stain and glaze



NOTE: Vacuum during hold time may cause color shift.

- 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

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

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