3M ESPE

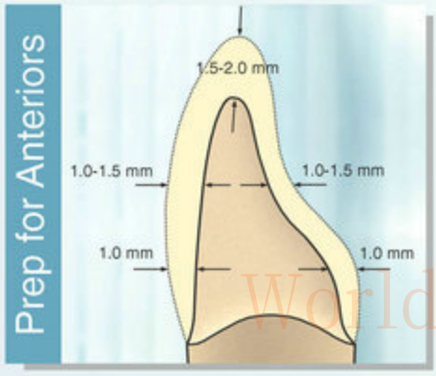
Lava™ All-Ceramic System

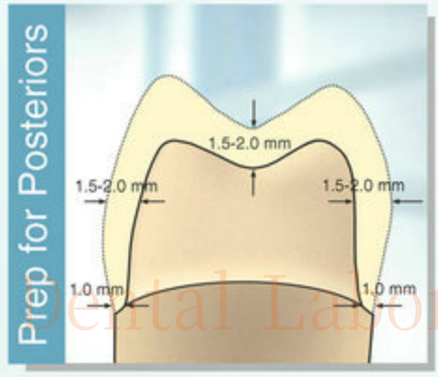
3M ESPE Authorized Lava™ Milling Center

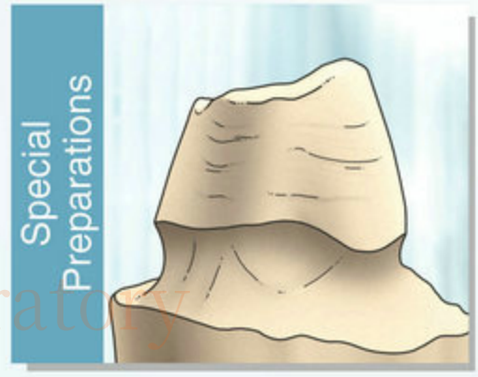
Preparation for Lava™ Crowns & Bridges

Ideally, the preparation includes a circumferential shoulder or chamfer with a horizontal angle of at least 5°. The vertical preparation angle should be at least 4°. The inside angle of the shoulder preparation must be given a rounded contour. All occlusal and incisal edges should also be rounded.

The marginal edge of the preparation needs to be continuous and clearly visible. A bevel should be avoided. For posterior and anterior teeth, a supragingival margin poses no problems. Due to the tooth-colored framework, very aesthetic results can be achieved.







Anterior Crown
- 1.5 - 2.0 mm incisal reduction
- 1.0 - 1.5 mm labial and lingual reduction
- Round the internal line angles
- Chamfer margin

Posterior Crown
- 1.5 - 2.0 mm occlusal/incisal reduction
- 1.0 - 1.5 mm axial reduction
- Round the internal line angles
- Chamfer margin

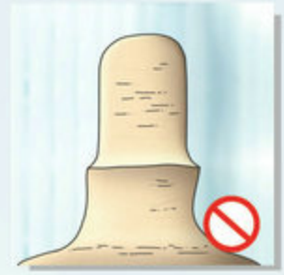
Tangential Preparation
Steep tangential preparations may result in extremely thin tapered margins. In principle, this type of preparation is possible, but caution is advised.

Unacceptable Preparation for Lava™ Crowns & Bridges

Gutter Prep: Margin cannot be detected unambiguously.

90° Shoulder: Margin cannot be detected unambiguously.

Undercuts must be avoided.



Parallel Walls: These are some what feasible, but, a cement gap cannot be milled in this case. This may affect the fit.

Sharp incisal-occusal edges must be avoided. The rounding radius should be >0.4 mm.

Divergent stumps in the bridge cannot be milled. Due to the restricted path of insertion, inclination of the two stumps cannot be realized.

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Preparation for Maryland Bridges

Preparation Depth: Up to 0.7 mm; The preparation needs to be in enamel instead of dentin. The enamel depth of a tooth can vary from 0.4 to 1.0 mm. Wall thickness of zirconia framework: 0.5 mm minimum to ensure sufficient strength.

Veneering: 0.1 mm (Glazing is necessary to prevent abrasion of antagonist); If the preparation depth can not be realized with the minimum wall thickness of 0.6 mm (zirconia + glazing) due to insufficient enamel thickness, the dentist should re-evaluate this indication. If the zirconia is not glazed, the restoration should not have any occlusal contact. We recommend the use of a preparation matrix, before tooth preparation, to be able to check the preparation depth.

For the preparation of retentive elements see figure 1 and 3 (e.g. pinholes, seating groove). A radius of ≥ 0.4 mm is required for the Lava™ milling system.

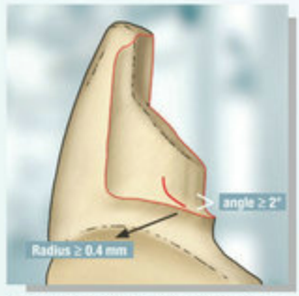


Figure 1: Rounded angles (Radius ≥ 0.4 mm, no sharp edges), clear margin and horizontal angle ≥ 2°.

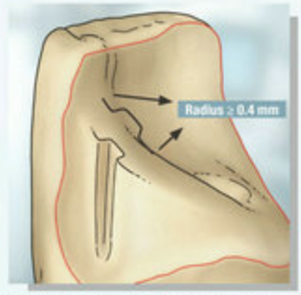


Figure 2: Retentive element: rounded ridge (Radius ≥ 0.4 mm.

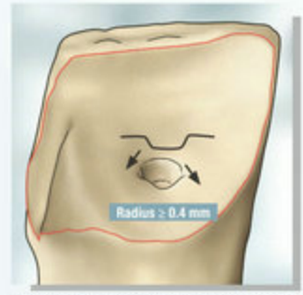


Figure 3: Retentive element: rounded pinhole (no sharp edges, radius ≥ 0.4 mm).

Remember: Adhesive & inlay bridges are complex. It's important to follow guidelines to avoid inferior marginal adaptation and lengthy manual fitting efforts after milling.

Figure 4: Not possible: circular preparation of the wings, no preparation in the middle, only one preparation margin can be detected by the system.

Preparation for Inlay Bridges

Preparation Depth: 2-4 mm; It is important to have sufficient space for a connector of 9 mm². The preparation should have a taper of ≥ 2°-3° and have no friction. The margins must be clearly indicated. Full ceramic preparation in general requires rounded angles (no sharp edges, minimum radius ≥ 0.4 mm). Wall thickness of zirconia inlay: ≥ 0.5 mm.

Veneering: Veneering or glazing is necessary to prevent abrasion of antagonist. Maximal length of pontic: 10 mm.

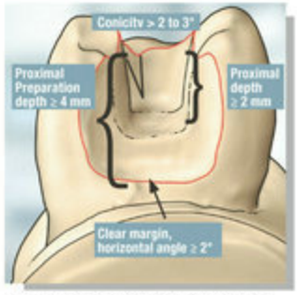


Figure 5: Proximal view inlay prep.

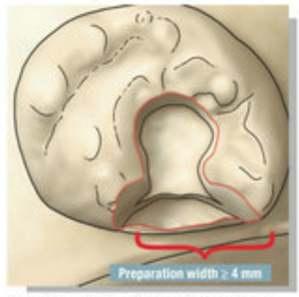
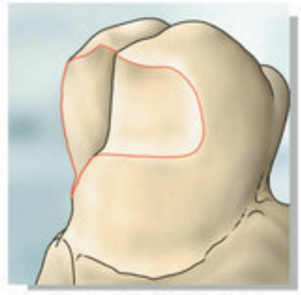


Figure 6: Occlusal view inlay prep.



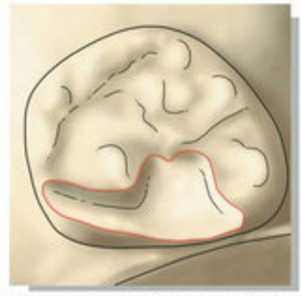


Figure 7A and 7B: Additional lingual or vestibular wing only with an extension maximally until tooth equator.

In the case of vestibular and lingual/palatinal wings in addition to the inlay cavity, the wings can be prepared by the Lava™ system maximally until a 90° angle to the inlay preparation (see figure 7A & 7B).