

Zirlux Zirconia Preparation Guidelines

Rotary Tooth Preparation

Preparation guidelines for Zirlux crowns and bridges are similar to the guidelines clinicians use for all-ceramic restorations. General preparation guidelines for Zirlux zirconia include the following:

- 1 Preparation should follow the anatomy of the tooth, providing at least the minimum thickness required for the respective restoration (see Minimum Zirconia Thickness below). Axial and occlusal reduction of 1.0mm is considered ideal for full-contour zirconia restorations.
- 2 A definitive finish line (i.e., shoulder with rounded internal line angles or chamfer margin) is recommended. Feather-edge preparations are acceptable for Zirlux restorations.
- 3 All sharp edges and line angles should be rounded.
- 4 Avoid undercuts, 90-degree shoulders, and gutter preparations.

Minimum Zirconia Thickness— Bridges

Anterior	3-Unit	4+ units	Cantilever with 1 pontic
Axial.....	0.5mm.....	0.7mm.....	0.7mm
Incisal/Occlusal.....	0.5mm.....	0.7mm.....	1.0mm
Connector Dimensions.....	7mm ²	9mm ²	12mm ²

Posterior	3-Unit	4+ units	Cantilever with 1 pontic
Axial.....	0.5mm.....	0.7mm.....	0.7mm
Incisal/Occlusal.....	0.5mm.....	1.0mm.....	1.0mm
Connector Dimensions.....	9mm ²	12mm ²	12mm ²

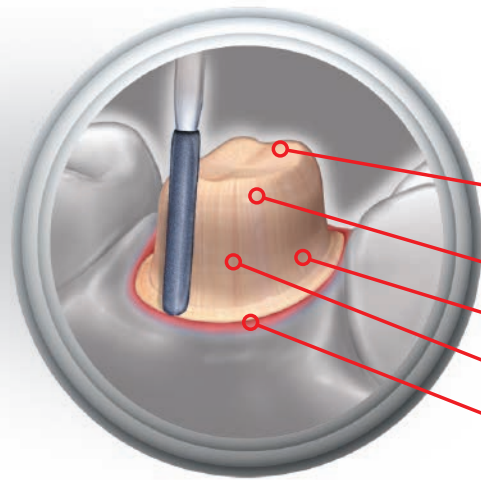
Minimum Zirconia Thickness— Crowns

Anterior/Posterior	Crowns
Axial.....	0.5mm
Incisal/Occlusal.....	0.5mm

Zirlux Zirconia Preparation & Finishing Guidelines

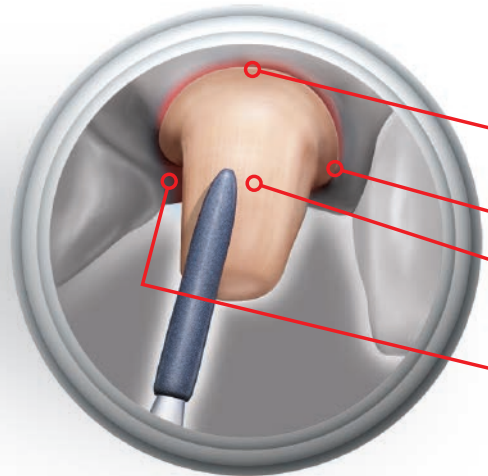


Zirlux Zirconia Preparation Guidelines



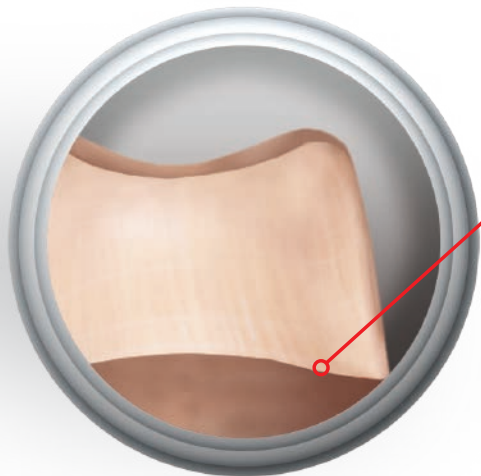
Ideal Chamfer Margins—Posterior

- Occlusal reduction of 1.0mm ideal; 0.5mm is the minimum.
- Rounded internal line angles
- Taper between 4 and 8 degrees
- Axial reduction of 0.5mm to 1.5mm
- Reduction of 0.5mm at the gingival margin



Ideal Chamfer Margins—Anterior

- Chamfer/shoulder preparation or feather edge
- Rounded internal line angles
- Incisal reduction of 0.5mm to 1.5mm
- Axial reduction of 0.5mm to 1.5mm
- Reduction of at least 0.5mm at the gingival margin



Feather-Edge Margin

- Feather-edge margin of greater than or equal to 0.5mm gingival reduction

Zirlux Zirconia Finishing Guidelines

Minor marginal finishing is necessary in virtually every indirect treatment to remove excess cement or during occlusal adjustments. The use of a systematic finishing technique following cementation will improve a restoration's long-term performance and maintenance of its marginal integrity. Key principles include:

- Excess cement must be removed to prevent plaque retention.
- Non-cutting, safe-end finishing burs enable finishing of gingival margins while protecting the soft tissues.
- Use burs with sufficient blade count for predictable fine finishing around the new restoration.

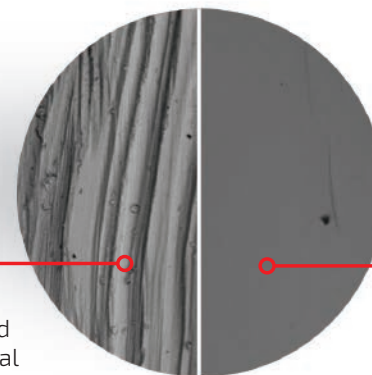
The high strength of Zirlux zirconia does not inhibit polishability. Clinical adjustments can roughen surfaces, but they easily polish to an exceptionally smooth surface.

Adjustments

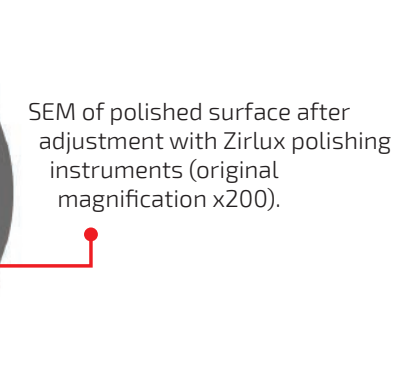
- Use only grinding instruments indicated for zirconia.
- When grinding use little or no pressure to reduce heat, which can cause fractures to the zirconia.
- Always use water during grinding to keep restorations cool.

Polishing

- To ensure minimal wear to the patient's opposing dentition, Zirlux FC2 and ST1 zirconia restorations must have a smooth surface, whether polished or glazed.
- If any anatomical adjustments are made, the surface must be

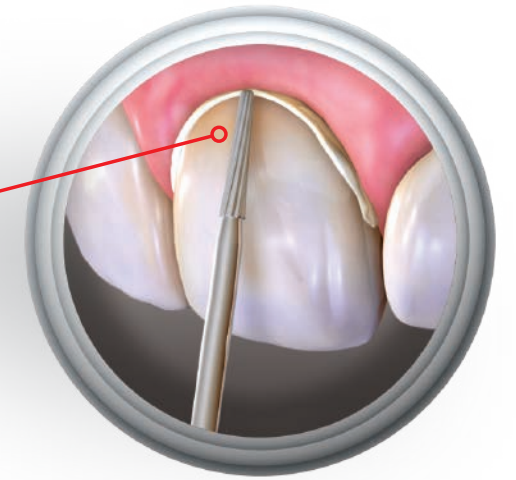


SEM of clinically adjusted Zirlux surface (original magnification x200).



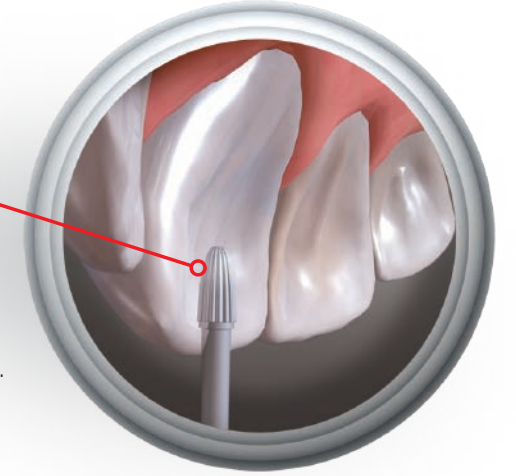
SEM of polished surface after adjustment with Zirlux polishing instruments (original magnification x200).

Smooth Surfaces Are Essential



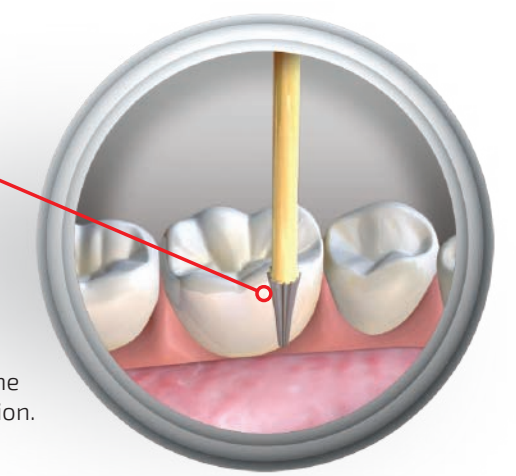
Marginal finishing with non-cutting bur tips

Minimal pressure and water are applied during finishing in order to prevent undue heating.



Egg-shaped carbides smooth inconsistencies

If anatomical adjustments are necessary, the surface must be re-glazed or polished using polishing cups and pastes developed for maximum surface smoothness.



Bullet-shaped and multi-fluted burs for occlusal finishing

It is very important that occlusal surfaces of Zirlux FC2 and ST1 restorations have a smooth glazed or polished surface.

An abrasive surface can wear the patient's opposing dentition.