

# Suggested Prep Guidelines and Bur Choices

## TOOTH PREPARATION GUIDELINES FOR ZIRCONIA CROWNS

### Tooth Preparation Guidelines

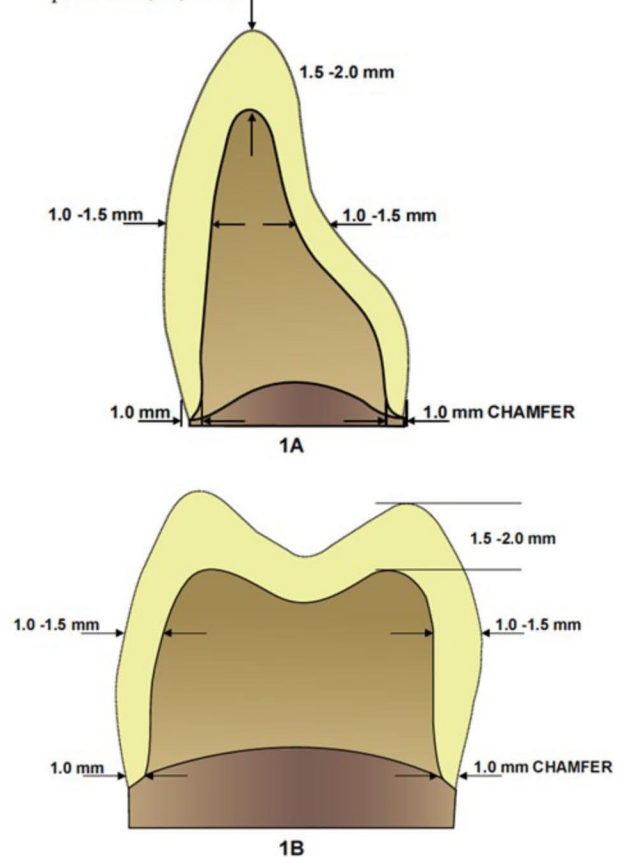
- Uniform, circumferential, tooth reduction of 1.0-1.5 mm
- Circumferential chamfer
- Occlusal reduction of 1.5-2.0 mm
- Rounded line angles
- Reduce linguals of anteriors with football diamond to create concave lingual

### Why Tooth Preparation Design is Important

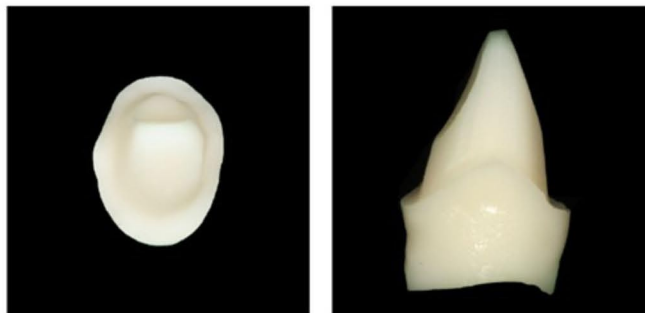
- Uniform reduction results in optimum ceramic strength
- Adequate reduction leads to better esthetics
- Smooth edges result in lower stress
- Lower stress decreases potential for fracture
- Ceramic restorations require a passive fit
- Scanners read smooth preparations more accurately

**Tooth reduction for shaded *zirconia-core* crowns is less than that for PFM or traditional all-ceramic crowns. Zirconia is very strong (>900 MPa) and an opaque layer is not required.**

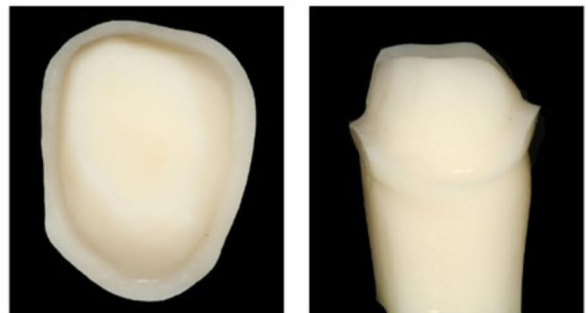
**Figure 1.** Tooth reduction guidelines for anterior (1A) and posterior (1B) teeth.



**Figure 2.** Sample preparations for anterior (2A) and posterior (2B) teeth.



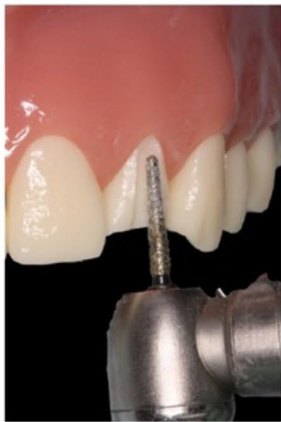
2A



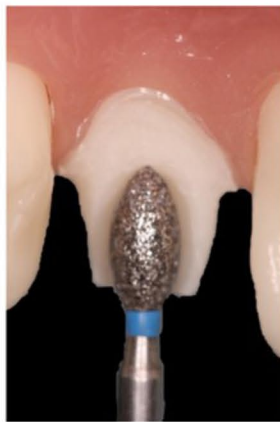
2B

## Anterior Preparations

- Incisal Reduction - Long Round End Taper, Medium or Coarse
- Facial Reduction - Long Round End Taper, Medium or Coarse
- Interproximal - Long Round End Taper, Medium or Coarse
- Lingual Reduction - Football, Medium or Coarse
- Rounding Corners - Long Round End Taper, Fine
- Margin Finish - End Cut, Fine



Facial Reduction

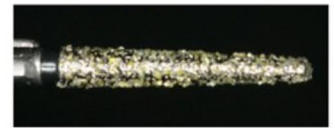


Lingual Reduction

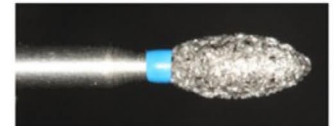


Margin Finish

Long Round End Taper  
#850 / HS-16 / HL-10



Football  
#379 / HS-23 / HL - 4.2



Wide Chamfer  
#855L / HS-18 / HL - 7.0



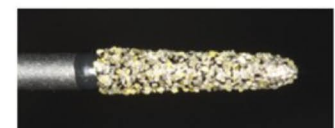
Barrel  
#811 / HS-33 / HL - 4.2



Narrow Chamfer  
#856L / HS-18 / HL - 9.0



Pointed Taper  
#878K / HS-16 / HL - 8.0



Long Round End Taper - Fine  
#850 / HS-16 / HL-10



End Cut - Fine  
#839 / HS-12

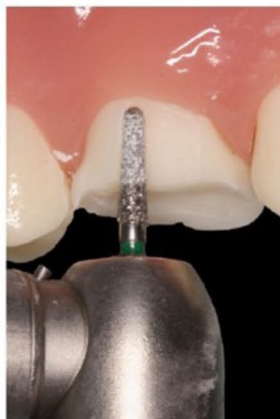


## Posterior Preparations

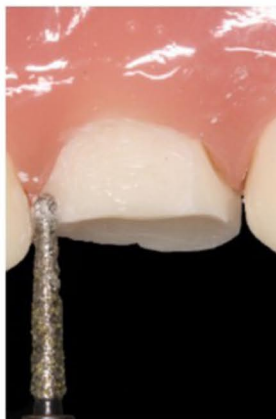
- Occlusal Reduction - Wide Chamfer, Barrel or Football, Medium or Coarse
- Axial Wall Reduction - Narrow Chamfer, Medium or Coarse
- Interproximal - Long Round End Taper, Medium or Coarse
- Rounding Corners - Long Round End Taper, Fine
- Margin Finish - End Cut, Fine



Occlusal Reduction



Axial Wall Reduction



Interproximal



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