

# INLAYS/ONLAYS

## CRISTOBAL<sup>®</sup>+

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Proven in clinical situations since 1993, Cristobal+ offers excellent esthetics and natural translucency that defies detection in the mouth. The material's exclusive post-curing polymerization process creates restorations with high hardness values, great overall flexural strength for exceptional fracture resistance and superb marginal integrity, making it the system of choice for indirect composite inlays, onlays, crowns (all teeth through first molar) and Inlay/Onlay or Maryland bridges.

Cristobal+ is strong, and offers an impressive combination of elasticity and wear resistance through the highly cross-linked structure that develops during its two-stage curing process. Yet, it is non-antagonistic, protecting opposing teeth while still supplying tremendous wear resistance. Cristobal+'s nonporous, biocompatible surfaces provides superior chairside polishability that is virtually impermeable to microorganisms. And, as they are mechanically polished, not glazed, the finish lasts indefinitely. There has never been a laboratory fabricated non-porcelain restoration that you can polish to such a lustrous natural shine!

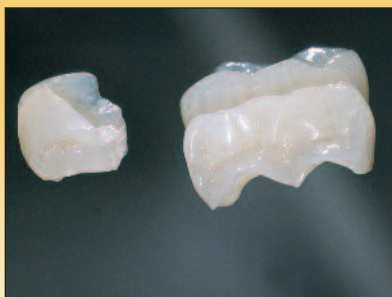


*Dentistry courtesy of Dr. Stephen Poss.*

*Restorations fabricated by Aurum Ceramic/Classic.*

### The Materials

The superior hardness of Cristobal + is due to its high degree of resin polymerization and the extraordinary bonding between the glass and polymer matrix. The Barium Borosilicate glass filler (approximately 74% by weight) in Cristobal + provides excellent matrix cohesion for strength, wear resistance and esthetics. The polymer (Bis-GMA based mixture - approximately 26% by weight) binds together the glass particles and demonstrates superior handling.



### The Process

The Cristobal + system uses two different curing modes to achieve the highest possible degree of polymerization. Following a low intensity cure, a high-density mode is utilized to cure the opaque and final incisal layers. This results in very favourable physical properties including one of the highest flexural strengths (195.6 MPa) of any indirect resin.



### Features and Benefits

- Proven clinical success since 1993.
- Exclusive post-curing polymerization process supplies high hardness values, great strength and superb marginal integrity.
- Tremendous wear resistance. Annual wear rate similar to enamel.
- Natural esthetics and translucency defies detection in the mouth.
- Low water solubility and low percentage polymerization shrinkage results in better fitting restorations.
- Excellent shade match and stability.
- Compatible with all shade guides.
- Superior chairside polishability. Mechanically polished, not glazed, for long-lasting finish.
- Lasting natural gloss and translucency.
- Improved physical properties inhibit staining found with previous generations of indirect composite restorative materials.

## Indications:

- Inlays/Onlays (All teeth)
- Crowns (All teeth through first molar)
- Bridges (All teeth through 2<sup>nd</sup> bicuspid, one pontic bridge only)

## Contraindications:

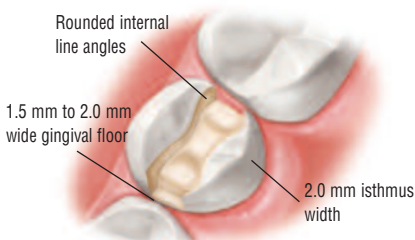
- Restorations that require more than one pontic between proximal abutments. Three-unit bridges only.

## Preparation:

### 1. General

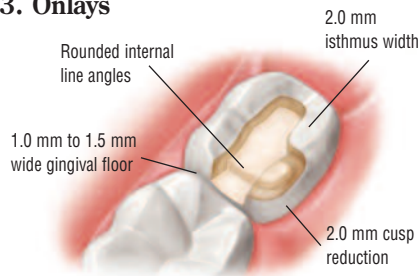
- Use a chamfer around the gingival margins. Margins that extend to the occlusal or incisal must be a 90° or butt joint. Clear margins are a prerequisite for an accurate restoration. Avoid feather edges and long bevels.
- Margins should be sharp, but all internal features, whether positive or negative, should be rounded. Avoid sharp angles and undercuts.
- Maintain even anatomical form reduction.
- These are minimum requirements. Strength and opacity will be increased with more tooth reduction.

### 2. Inlays



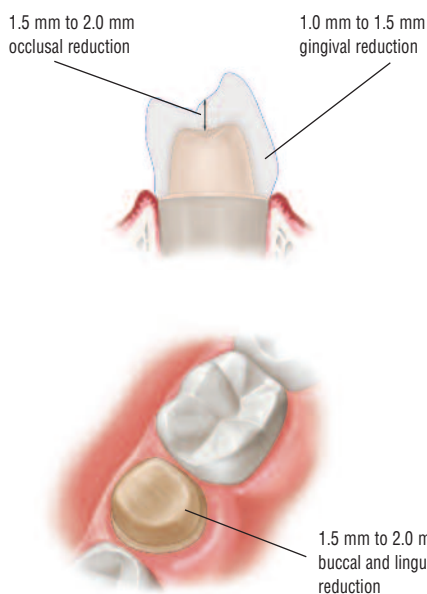
- Observe antagonist contacts. Avoid margins in contact areas.
- The preparation depth should be approximately 1.5 mm in the fissure area.
- All margins must be a butt joint. No flared or feather edge margins.
- The enamel surfaces created by parallel preparation are generally sufficient for acid etching.
- With flat cusps, diverging preparation helps optimize acid etching of enamel.
- Proximal box axial walls should be flared slightly. Enamel margin should not form acute angle. Prepare proximal boxes with 60°- 80° cavosurface angles (rounded internal line angles). Avoid thin walls or flared preparations.

### 3. Onlays



- An onlay preparation is indicated when the preparation margin is less than 0.5 mm away from the cusp tip or when the enamel is severely undermined.
- Prepare tooth with 2.0 mm of occlusal reduction, rounded internal line angles and no bevels.
- Use same procedure as for inlays.
- 2.0 mm cusp reduction recommended.

### 4. Posterior Tooth Reduction



### Dual-Cure Bonding Technique

NOTE: Must be bonded using dual cured resin cement with companion enamel/dentin bonding agent. Light cure only resin can be used for veneers.

- Try-In Paste (Optional).** Apply Try-In Paste to the restoration. Seat the restoration, check the color and then remove it.
- Clean and Dry (Optional).** If Try-In Paste has been used, thoroughly clean all internal surfaces of the restoration with water spray and air dry.

3. **Apply Silane.** Apply Caulk Silane Coupling Agent to the bonding surfaces of the restoration according to instructions.

4. **Tooth Conditioner.** Apply Caulk 34% Tooth Conditioner Gel to available enamel (and dentin if desired) for 15 seconds. Rinse for 10 seconds. Blot dry to keep moist, do not rub.

5. **Mix Prime & Bond® NT™ Dual Cure.** Place 1-2 drops of adhesive and 1-2 of drops of Self Cure Activator into mixing well and mix with new brush tip.

6. **Apply Bond to Tooth.** Apply Prime & Bond NT Dual Cure mixture to thoroughly wet tooth surfaces. These surfaces should remain wet for 20 seconds, which may necessitate additional adhesive. Gently air dry for five seconds. Surface should have uniform, glossy appearance. If not, repeat application. Light cure for 10 seconds.

7. **Apply Bond to Restoration.** Apply single coat of Prime & Bond NT Dual Cure to bonding surfaces of restoration. Immediately air dry for five seconds.

8. **Mix Calibra.** On a mixing pad, dispense equal amounts of the desired shade of Calibra base and REGULAR OR HIGH VISCOSITY catalyst. Mix 10-20 seconds until uniform.

*Minimum work time: 2 min. 30 sec.*

9. **Apply Calibra.** Apply a thin layer of cement to all bonding surfaces of the restoration.

*TIP: Sometimes it's easier to apply a thin layer of cement to the internal portions of the tooth preparation to avoid any porosity or voids.*

10. **Seat.** Seat the restoration slowly. Maintain downward pressure and remove excess cement from marginal areas with a dry brush.

11. **Pre-Cure.** A 10-second light "Pre-Cure" at the margins will "gel" the excess cement for easy clean-up. Lift off the excess cement around the margins.

12. **Light Cure.** Once stabilized, light cure all marginal areas for 20 seconds from the buccal, lingual and occlusal aspects. *Apply moderate pressure throughout the 6-minute self-cure set time.*

13. **Finish.** Complete all finishing and polishing with the Enhance® System.

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