



## Professional Resources

### Esthetic Temporary Fabrication: An Innovative Technique

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The current trend for chairside fabrication of temporary restorations is to use a cartridge-delivered temporary composite (Luxatemp®, Zenith Dental / DMG; 3M™ Iso-Temp™ Temporary Material, 3M™ Dental Products; Turbo Temp, Danville Engineering). These composite materials have many advantages over traditional powder-liquid methyl methacrylates, including increased accuracy and speed. However, fracture resistance is a frequently encountered problem when using these cartridge-delivered composites. Therefore, we have developed a fast technique for making temporary restorations using conventional light-curing composites. These temporaries have dramatically increased fracture resistance.

This new technique offers enhanced esthetics as well as better mechanical properties. The technique requires only a clear vinyl poly-siloxane (VPS) impression material (Star VPS™, Danville Engineering) (**Figure 1**); Memosil™ C.D., Heraeus Kulzer, Inc; or PolySil, SciCan USA) and any conventional, light-curing composite.



**Figure 1.** Clear Star VPS™ impression material.

### Preliminary Impression

Before teeth preparation, a trayless technique is used to make the preliminary impression (**Figure 2**), and cheek retractors allow for great visibility. The clear VPS material is placed on the palatal aspect and moved to the buccal using an impression gun tip. The patient is asked to bite down and position the tongue on the roof of the mouth. This movement will immediately place the teeth in maximum intercuspation. This position, which will be molded in the preliminary impression, ensures that the patient's previous occlusion is reproduced. Before removing the cheek retractors to border mold the impression, ask the patient to use his or her tongue to gently guide the material toward the teeth. The patient's tongue and muscle movement makes for a well adapted and suitably thin impression. Ideally, the material should be kept thin; however, if it is thick, it is clear enough that light can pass through to cure the composite with extra curing time.

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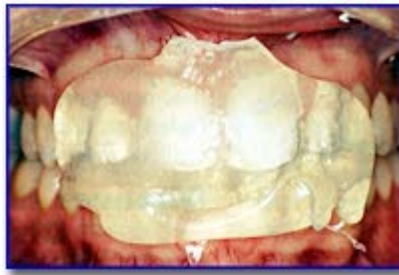
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**Figure 2.** Preliminary impression in clear VPS using a trayless technique before teeth preparation.

## Composite Placement Procedures

After teeth preparation (**Figure 3**), a slightly excessive amount of composite is placed into the preliminary impression (**Figure 4**). If the composite is stiff, place the syringe in warm water to lower the viscosity. The composite and tray is then seated over the prepared teeth and the patient is asked to gently bite the impression.



**Figure 3.** Completed teeth preparation. **Figure 4.** Composite placed into the clear VPS impression.

While not necessary, the teeth may be disinfected and desensitized by placing Microprime™ (Danville Engineering) or Gluma® Desensitizer (Heraeus Kulzer, Inc.) over the prepared teeth before seating the composite (**Figure 5**). If desired, a water-based lubricant can be used to ensure bonding does not occur to the prepared tooth or to a previously placed composite.



**Figure 5.** Seating of composite filled VPS impression.

## Final Procedures

It is best to do a partial cure of the composite (**Figure 6**), remove the impression, and trim off the excess composite (**Figure 7**). Margination of the composite is sometimes improved by using a 12-fluted 7901 carbide bur (Brasseler USA®) (**Figure 8**). Apply a surface sealant (Palaseal®, J. F. Jelenko & Co., Inc.) before fully light-curing the sealant and the composite (**Figure 9**). The result is a fully cured, strong, esthetic temporary restoration with excellent retention (**Figure 10**).



**Figure 6.** Light-curing through the VPS impression.



**Figure 7.** Carving instrument to remove excess.



**Figure 8.** A 12-fluted carbide bur margination.



**Figure 9.** Application of surface sealant.



**Figure 10.** Completed temporaries.

## Helpful Hints

In our experience, bonding or cementing the restoration is not necessary if the tooth preparation is mechanically retentive and will be used for only 2 weeks. The excellent adaption of the composite to the tooth makes sensitivity a very rare occurrence. The temporary is removed by splitting with a bur and separating the two halves with a prying instrument. Because the temporary is destroyed, the preliminary impression should be retained until the case is completed.

In the event that the tooth preparation is not retentive, a preliminary spot etching (**Figure 11**) may be performed in the center of the facial area. A light-curing bond agent is applied and cured (**Figure 12**), then the procedure is performed as previously described. Light-curing the composite will adhere it to the air inhibited surface of the bonding agent. Removal is the same as previously described, except that an additional step of removing the spot bond is necessary and can be performed with a fine disc.



**Figure 11.** Spot etching.



**Figure 12.** Curing of the bonding resin applied to the etched spots.

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