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Morphologic Custom Shade Guide Fabricated with Feldspathic Ceramic

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Clinicians have successfully used commercial shade guides for many years. However, many studies have demonstrated the inadequacies of the existing shade guides: shade variations exist between different batches of porcelain from the same manufacturer, and the thickness of the shade guide tooth is different from the real tooth or may not have the correct core or backing.^{1, 2 and 3} In addition, the actual porcelains may not match the shade guides' tabs.⁴

One answer to these problems is to fabricate a customized shade guide from the actual ceramic materials.^{5, 6, 7, 8, 9 and 10} However, most customized tabs do not resemble the tooth morphology. Reed¹¹ indicated the significance of the geometric design of a tab for shade matching. Thus, the purpose of this article was to demonstrate how to fabricate a morphologically correct custom shade guide.

Procedure

1. Make an irreversible hydrocolloid impression (Jeltrate Plus; Dentsply Caulk) of an ivorine maxillary right central incisor tooth (dental study model; Nissin Dental Products Inc) for duplication. Then, inject polyvinyl siloxane (PVS) impression material (Aquasil Ultra Smart Wetting XLV; Dentsply Intl) into the irreversible hydrocolloid impression to duplicate the PVS tooth.
2. Make small, phosphate-bonded refractory die material (12×12×6-mm G-Cera Orbit Vest; GC America) trays that have indentations inside for retention (Fig. 1A).

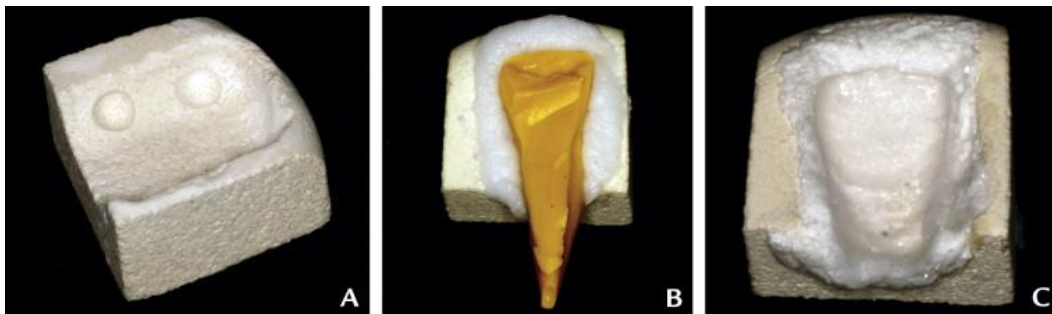


Figure 1. A, Stone tray with phosphate-bonded refractory die. B, Duplicated PVS tooth placed on refractory stone tray over auxiliary firing pastes. C, After removing PVS tooth out of refractory stone tray. PVS, polyvinyl siloxane.

3. Squeeze auxiliary firing pastes (IPS Object Fix putty; Ivoclar Vivadent) on the refractory tray. Then press the duplicated PVS tooth onto the firing pastes to form the intaglio of the tooth (Fig. 1B). Remove the silicone tooth gently (Fig. 1C).
4. Place the refractory tray in a microwave (model RMW733, 0.7 cu ft; RCA Co) for 30 seconds to harden the firing paste.
5. Apply feldspathic porcelain to the intaglio area of the firing paste on the refractory tray and fire it in a porcelain oven (Pro 100;

Whip Mix Corp). After glazing, finishing, and polishing, holders can be made (Fig. 2).

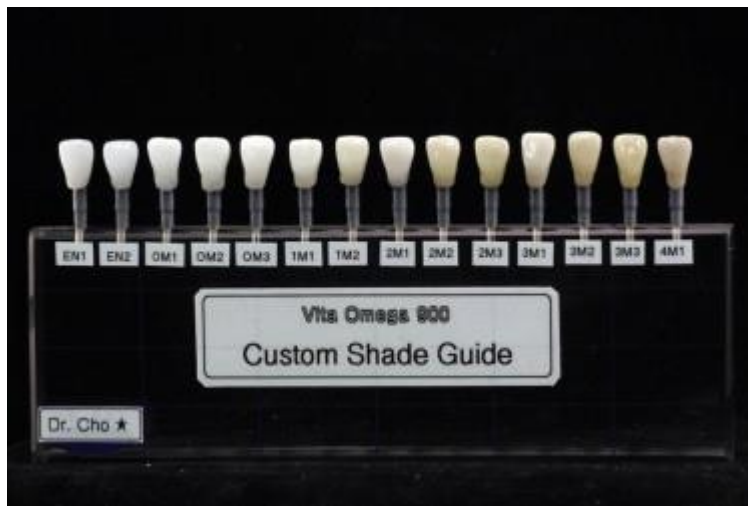


Figure 2. Morphologic custom shade guide of Vita Omega 900.

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