

### Estelite Sigma Quick- Using Only One Shade (A3) to Replace 8 Shades

**Introduction:** In an economy where there is an increased demand for esthetic direct restorations, resin composites continue to be the material of choice. To address this need, manufacturers have introduced resin composite systems with a diverse range of enamel, dentin, and body colors to help dentists produce the desired esthetic result. While a multi-layered shading system used by a skilled clinician will yield an excellent esthetic result, this technique is complex, time consuming, and is not understood by the vast majority of dentists. Many clinicians are seeking new materials that help simplify the process. They desire products that exhibit exceptional esthetics while maintaining excellent physical properties that can be universally used in anterior and posterior regions.

Understanding the needs of clinicians, *Tokuyama Dental America Inc.* developed *Estelite Sigma Quick*. This universal, supra-nano filled composite exhibits superb physical properties, excellent handling characteristics, and is renowned for its ability to blend into the surrounding tooth structure, whether in enamel or dentin.

For this clinical case study, the author will share cases where *Estelite Sigma Quick* was used in a mono-layered technique, using only shade A3. The purpose is to see if one shade, A3, could be used solely to integrate into a wide variety of shades, ranging from A2-C4. Let's see what you think!

#### Description:

*Estelite Sigma Quick*® is a universal, low shrinkage, supra-nano filled composite indicated for Class I – V restorations (Figure 1), utilizing 100% spherical filler technology. With a filler weight of 82% (71% volume) of silica-zirconia filler, the spherical fillers provide a uniform diffusion of light, allowing for a more forgiving shade match, and superb blend to surrounding teeth. In addition, according to the manufacturer, the spherical fillers provide low composite wear over time and are safe for opposing dentition while causing less wear on opposing teeth. *Estelite Sigma Quick* has a low 1.3% volumetric shrinkage and low shrinkage stress for decreased post-op sensitivity and resistance against marginal leakage, allowing for lasting patient comfort. It offers a 90 second working time under ambient light, and features a proprietary initiator system that allows it to polymerize quickly, with very minimal shade shift over time. It is available in 20 shades in both syringe and pre-loaded tips; however, in most cases one shade can blend with several shades, eliminating the need to stock every shade. This product received a 99% clinical rating by THE DENTAL ADVISOR, and is the only composite awarded The Top Universal Composite four years in a row.



Figure 1. *Estelite Sigma Quick*, Tokuyama Dental America Inc.

#### Case Presentation 1: Initial Shade A2

A 33-year-old male patient presented for a routine oral examination during a prophylaxis appointment. Radiographic revealed decay on the distal of tooth #13. The patient had treatment performed the same day. A pre-op photo was taken and a *Vita* shade guide was used to take record the initial shade, A2 (Figure 2).

**Clinical Procedure and Outcome:** After anesthesia was administered, preparatory removal of decay was initiated. To ensure the class II preparation was well contoured interproximally and resulted in a good contact point, a sectional matrix system was used. A 7<sup>th</sup>-generation adhesive, *BOND FORCE* (Tokuyama Dental America Inc.), was applied per manufacturer's instructions, and the prepared tooth was restored with two increments of *Estelite Sigma Quick*. After light curing and removal of the matrix band, the composite restoration was finished and adjusted for proper occlusion (Figure 3).



Figure 2. Pre-operative view of tooth No. 13<sup>00</sup>.



Figure 3. Post-operative view of the final restoration on tooth No. 13<sup>00</sup>.

## Case Presentation 2: Initial Shade A3

A 38-year-old patient presented with maxillary centrals exhibiting moderate wear and incisal edge breakdown as a result of a parafunctional habit. Clinical examination revealed a color mismatch between previous composite restorations and natural tooth. *Estelite Sigma Quick* was selected as the desired composite restorative material due to its outstanding chameleon effect and excellent physical properties.

**Clinical Procedure and Outcome:** The patient was anesthetized and the initial shade (A3) was determined using a *Vita* shade guide (Figure 4). The defective restorations were removed and a bevel was placed in enamel. The total-etch technique was used and a single-component adhesive was applied per manufacturer's instructions. *Estelite Sigma Quick*, shade A3, was applied in two increments. Finishing and polishing discs were used to shape and finish the restoration, and occlusion was adjusted. Again, the postoperative outcome presents favorable esthetics and harmonious integration of color (Figure 5).



Figure 4. Pre-operative view of incisal chipping on teeth Nos. 8 and 9.



Figure 5. Post-operative view of final restorations on teeth Nos. 8 and 9.

## Case Presentation 3: Initial Shade B2

A 24-year-old female patient presented with a tooth fracture of the maxillary left central incisor (Figure 6) with an initial shade of B2. The fracture was a result of physical trauma from an object. In attempt to be conservative, the incisor was restored with a composite restorative material. *Estelite Sigma Quick* was selected as the desired composite restorative material due to its ease of use and excellent physical properties.

**Clinical Procedure and Outcome:** The patient was anesthetized and different shades of composite were tried on tooth and polymerized before making the final selection. *Estelite Sigma Quick* A3 was selected as the desired shade due to its outstanding chameleon effect. A bevel was placed in the enamel, the total-etch technique was used, and a single-component adhesive was applied per manufacturer's instructions. *Estelite Sigma Quick*, shade A3, was applied in one increment. Finishing and polishing discs were used to shape and finish the restoration, and occlusion was adjusted. The postoperative outcome presents most favorable esthetics and harmonious integration of color (Figure 7).



Figure 6. Pre-operative view of fractured tooth No. 9<sup>maxillary</sup>.



Figure 7. Post-operative view of the final restoration.

## Case Presentation 4: Initial Shade B3

A 63-year-old female patient with a history of bruxism wanted to improve the esthetics of her smile. Her maxillary incisors had been restored previously and she has been maintaining them with a maxillary occlusal nightguard. After discussing her options in detail, we decided to restore her mandibular defects with resin composite.

**Clinical Procedure and Outcome:** The patient was anesthetized and the initial shade (B3) was determined using a *Vita* shade guide (Figure 8). *Estelite Sigma Quick* was selected as the composite restorative material because of its excellent handling and physical properties. Shade A3 was chosen due to its outstanding chameleon effect. The total-etch technique was used and a single-component adhesive was applied per manufacturer's instructions. The composite was applied in a one-shade technique. Finishing and polishing discs were used to shape and finish the restoration, and occlusion was adjusted. The postoperative outcome presents favorable esthetics and harmonious integration of color (Figure 9).



Figure 8. Pre-operative view of worn down mandibular teeth Nos. 26-28.



Figure 9. Post-operative view of final restorations.

## Case Presentation 5: Initial Shade B4

A 56-year-old female patient presented with cold sensitivity of the maxillary right canine. Clinical examination revealed a faulty composite restoration with visible recurrent decay.

**Clinical Procedure and Outcome:** The patient was anesthetized and the initial shade was determined (B4) using a *Vita* shade guide (Figure 10). *Estelite Sigma Quick* was selected due to its ease of use, and shade A3 was selected due to its outstanding chameleon effect. Anesthesia was administered and the old composite restoration and recurrent decay were removed. A bevel was developed 0.5 mm in the enamel to reduce the potential for future microleakage and to interrupt the appearance of the chamfer line. The total-etch technique was used and a single-component adhesive was applied per manufacturer's instructions. The composite was applied in a one-shade technique. Finishing and polishing discs were used to shape and finish the restoration. A photograph was taken the same day (Figure 11).



Figure 10. Pre-operative view of faulty restoration on tooth No. 6<sup>F</sup>.



Figure 11. Post-operative view of the final restoration on tooth No. 6<sup>F</sup>.

## Case Presentation 6: Initial Shade C4

A patient presented with a faulty amalgam restoration and radiographic display of interproximal decay on distal of the upper first molar (Figure 12). A resin composite restoration was recommended.

**Clinical Procedure and Outcome:** Initial shade of C4 was determined using a *Vita* shade guide prior to treatment. The patient was anesthetized and the failing amalgam and recurrent decay were removed. Once the class II preparation was completed, a sectional matrix system was placed and a self-etching adhesive, *BOND FORCE* (Tokuyama Dental America Inc.), was applied per manufacturer's instructions. *Estelite Sigma Quick*, shade A3, was placed in 2 mm increments. After curing the final layer, the restoration was finished, polished, and adjusted for proper occlusion (Figure 13).



Figure 12. Pre-operative view of the faulty amalgam restoration on tooth No. 14<sup>D0</sup>.



Figure 13. Post-operative view of the final restoration on tooth No. 14<sup>D0</sup>.

## Conclusion:

The six clinical cases presented here demonstrate the simplicity and versatility of a mono-layered composite. In these patients, one shade, A3, had the ability to blend to a variety of different shades while maintaining a natural looking restoration. The simplicity, esthetics, and properties of *Estelite Sigma Quick* make it an ideal choice as a direct restorative material for both the anterior and posterior regions.

