



Glidewell Dental Laboratories

www.glidewelldental.com

98%
rating at
recall

Purpose:

Obsidian is a lithium silicate glass ceramic that exhibits excellent translucency, resulting in superior esthetics. It is indicated for crowns, inlays, onlays, and veneers; possesses above average flexural strength and is recommended mainly for anterior and premolar crowns.

Clinical Evaluation Protocol:

A total of 226 **Obsidian** restorations were placed over a 12-month period. By year three, 206 had been recalled. The **Obsidian** restorations included 64 anterior crowns, 140 premolar crowns and 2 molar crowns (Figure 1). Both upper and lower teeth were restored. Tooth preparation guidelines provided by Glidewell Dental Laboratories were followed. All restorations were fabricated and the internal surface pre-etched by Glidewell Dental Laboratories. Forty restorations were cemented with self-adhesive resin cements and 186 were cemented with adhesive resin cements (Figure 2).



Obsidian, teeth # 6-10 at three years.

Results at Three-year Recall:

Two hundred and six restorations (88% of the total number of restoration placed) had been recalled by year 3 and were evaluated in the following areas: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, wear resistance, and retention. Of the recalled restorations, 114 had been in function for approximately 2 years and up to 3 years (55% of all recalled restorations) (Figure 3).

Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Fig. 1: Distribution of restorations recalled at three years.

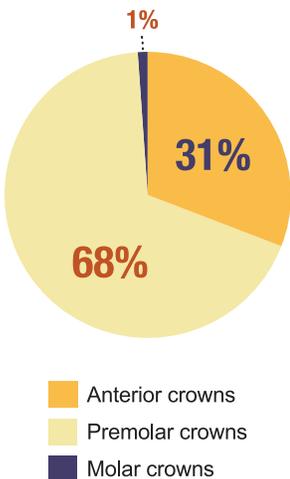


Fig. 2: Types of cements used with **Obsidian** restorations.

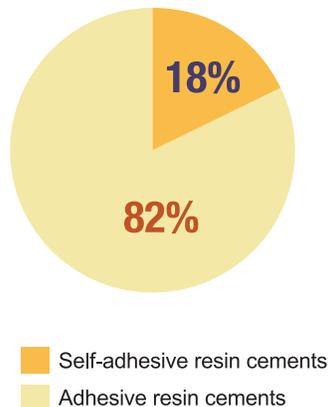
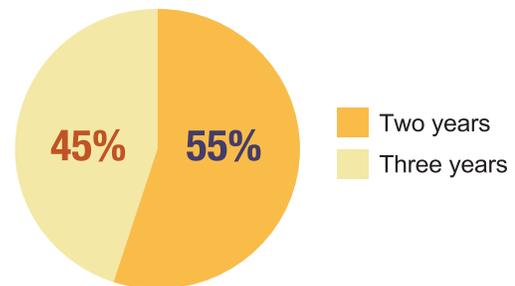


Fig. 3: Years in function of **Obsidian** restorations.



Esthetics

There were 198 **Obsidian** crowns that received an excellent rating of five for esthetics (Figure 4). Eight crowns received a rating of 4. Patients, doctors and staff continued to report how natural and beautiful the crowns looked.

Resistance to Marginal Discoloration

To date, only two of the recalled **Obsidian** restorations have exhibited slight microleakage in the vicinity of the cervical margin and neither needed any intervention (Figure 4). This is unchanged from the 30-month clinical performance report.

Resistance to Fracture and Chipping

For recalled restorations, 197 of 206 **Obsidian** restorations (96%) exhibited excellent resistance to fracture/chipping (Figure 4). Of the remaining 9 crowns, 4 were premolar crowns that fractured, including one when the patient hit his head in a work-related injury. Two additional premolar crowns were replaced due to hairline cracks, and an anterior crown fractured in a patient who was a heavy bruxer and not wearing a bit splint.

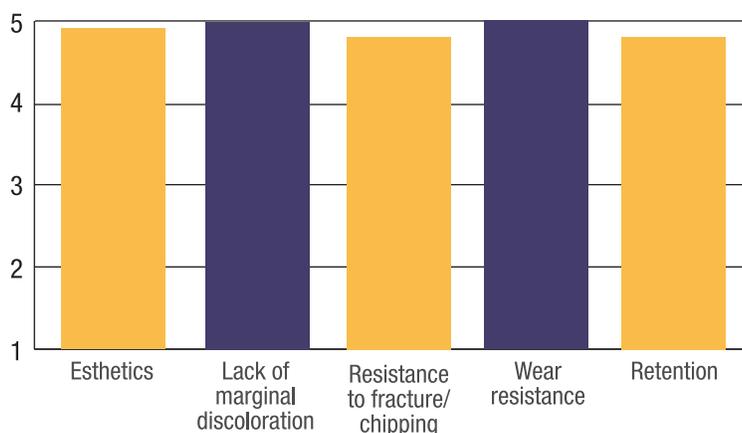
Wear Resistance

The wear resistance of the recalled **Obsidian** crowns was superb, with 205 of 206 crowns receiving an excellent rating. The remaining crown received a rating of very good (Figure 4).

Retention

Other than the one crown that fractured, four recalled **Obsidian** crowns had debonded at 3 years (Figure 4). For one of these crowns, the core also debonded and a new core and crown was provided. The other three crowns were cleaned, etched and recemented using adhesive resin cement.

Fig. 4: Ratings of **Obsidian** restorations at three-year recall.



Summary

Over a three-year period, the clinical performance of recalled **Obsidian** crowns was exceptional. Esthetics, resistance to marginal discoloration and wear resistance were excellent. The restorations will continue to be monitored over time. At three years, **Obsidian** received a clinical performance rating of 98%.