

LONG-TERM CLINICAL PERFORMANCE

Glidewell Dental Laboratories
www.glidewelldental.com

Description

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



Obsidian



The product received a
98% clinical performance rating
at the 30-month recall.

Clinical Evaluation Protocol

A total of 226 Obsidian restorations were placed over a 12-month period. One hundred and ninety-nine (199) restorations were recalled at 30 months. The restorations included 64 anterior crowns and 135 premolar crowns involving both upper and lower teeth (Figure 1). All restorations were fabricated and the internal surface pre-etched by Glidewell Dental Laboratories. Tooth preparation guidelines provided by Glidewell Dental Laboratories were adhered to. All restorations were cemented with resin cements. Forty (18%) restorations were cemented with self-adhesive resin cements and 186 (82%) were cemented with adhesive resin cements. (Figure 2).

Figure 1. Distribution of Obsidian Restorations at 30-month recall.

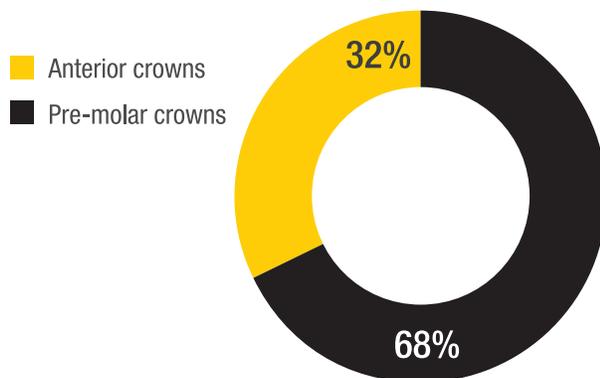
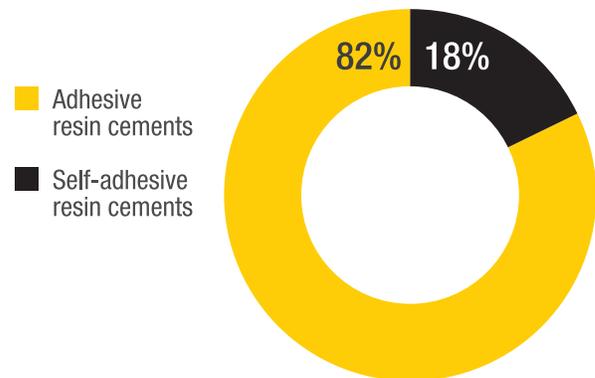


Figure 2. Type of cement used with Obsidian restorations.



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

Results at 30-month Recall

One hundred and ninety-nine restorations (88% of the total number of restoration placed) were recalled and evaluated in the following areas: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, wear resistance, and retention. Of the recalled restorations, 41% were in function for approximately two years while 59% were in function for approximately 30 months (Figure 3).

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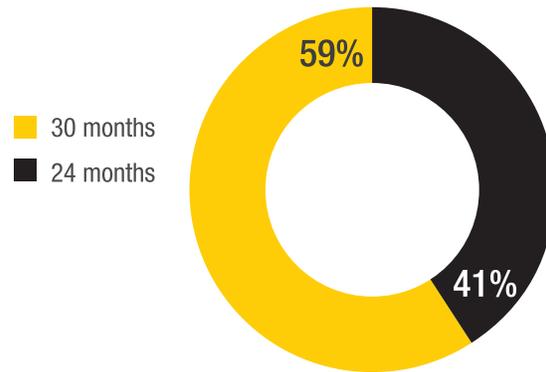
Esthetics

One hundred and ninety two (96%) **Obsidian** crowns received an excellent rating of five for esthetics (Figure 4). Seven crowns received a rating of 4. Patients, doctors and staff all raved about how natural and beautiful the crowns looked over the 30-month period.



Photo of #12, 13 Obsidian crowns at 2 1/2 yrs.

Figure 3. Time of Obsidian restorations in service.



Resistance to Fracture and Chipping

Obsidian restorations exhibited excellent resistance to fracture/ chipping (Figure 4). Two premolar crowns exhibited faint vertical hairline cracks just after cementation and both were eventually replaced. A third premolar fractured due to a work related accident and was replaced with a **Bruxzir Anterior** crown. One anterior crown fractured at the lingual cervical and was replaced with an IPS e.max crown. In this case the patient was a heavy bruxer and was not wearing a bite splint.

Resistance to Marginal Discoloration

To date only two of the recalled **Obsidian** restorations exhibited slight microleakage in the vicinity of the cervical margin and neither needed any intervention (Figure 4).

Wear Resistance

One anterior **Obsidian** crown exhibited moderate wear facet at the lingual that we believe resulted in the chip at the lingual margin; that crown was replaced (Figure 4).

Retention

Three **Obsidian** crowns (>1%) debonded over the 30-month period (Figure 4). These crowns were cleaned, etched and recemented using adhesive resin cement.

Summary

The performance and esthetics of **Obsidian** crowns during the 30-month evaluation period has been exceptional. The restorations will continue to be monitored over time. **Obsidian** received a clinical performance rating of 98% at the 30-month recall.

Consultants' Comments

- **“Exceptional esthetics and a favorite among patients.”**
- **“Outstandingly beautiful - they look great and very natural.”**
- **“There is nothing not to like, superior esthetics and they have held up very nicely.”**

Figure 4. Rating of Obsidian restorations at 30-month recall.

