



96%  
rating at  
recall

3M Oral Care

www.3M.com/dental

Description:

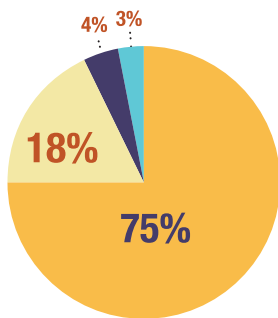
**RelyX Unicem Self-Adhesive Resin Cement** is dual-cured and does not require separate etching, priming or bonding. The cement is filled 72% by weight and contains fluoride. **RelyX Unicem** is available in capsules in shades A1, A2, A3 Opaque, White Opaque, and Translucent. **RelyX Unicem 2** is available in a paste/paste formulation delivered via a *Clicker* or an automix syringe. The manufacturer claims that **RelyX Unicem 2** provides an excellent marginal seal. Both formulations are indicated for the cementation of composite crowns, bridges, inlays and onlays; PFM and metal restorations, implant abutments and endodontic posts.

In some geographical areas, **RelyX Unicem 2** is known as **RelyX U200**.

Clinical Evaluation Protocol:

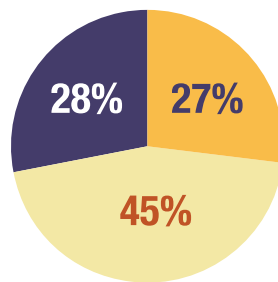
More than 6000 restorations have been cemented with **RelyX Unicem** and **RelyX Unicem 2** over the past 15 years. Close to 3400 were recalled at about 15 years. The restorations include ceramic inlays, onlays, crowns and bridges as well as zirconia crowns and bridges and endodontic posts (Figure 1). Approximately 2/3 (2226) of the recalled restorations were cemented with **RelyX Unicem**, whereas 1/3 (1166) were cemented with **RelyX Unicem 2**. The age of the restorations recalled ranged from 5 to 15 years (Figure 2).

Fig. 1: Distribution of restorations cemented with 3M™ RelyX™ Unicem and 3M™ RelyX™ Unicem 2 recalled at 15 years.



- Posterior crowns
- Anterior crowns
- Inlays/onlays
- Bridges

Fig. 2: Age of restorations cemented with 3M™ RelyX™ Unicem and 3M™ RelyX™ Unicem 2 evaluated at recall.



- 6-8 years
- 9-12 years
- 13-15 years



Results at 15 years:

Categories evaluated at recall included: Lack of post-operative sensitivity, lack of marginal discoloration and retention. Each category was rated on a scale of 1-5: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Lack of Post-operative Sensitivity

From its inception **RelyX Unicem** has had very few reported and documented instances of post-operative sensitivity (Figure 3). The post-operative sensitivity was less than 1% of the seated restorations and even lower for restorations cemented with **RelyX Unicem 2**. Sensitivity usually occurred shortly after seating the restorations and often subsided within a couple of weeks after cementation.

Consultants' Comments:

- "RelyX Unicem is still my first choice for self adhesive resin cement."
- "Very retentive with very few debonds over the 15 years that I have been using it."
- "Excellent esthetics overall; in very few cases, I have noticed some discoloration at the margin due to microleakage."
- "After all these years RelyX Unicem has proven itself in my dental practice - good retention, good esthetics and almost no marginal discoloration."

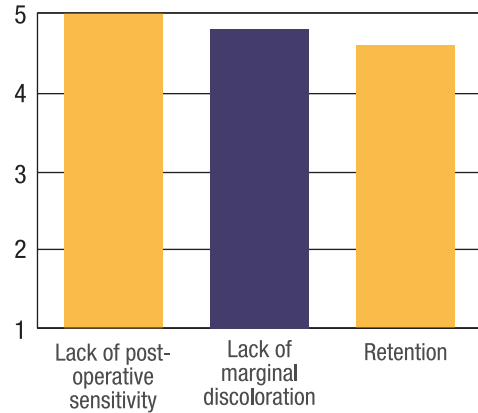
## Lack of Marginal Discoloration

Ninety-five percent of the recalled restorations cemented with **RelyX Unicem** showed no marginal discoloration, while 98% of restorations cemented with **RelyX Unicem 2** exhibited no discoloration at the margins (Figure 3). Discoloration was exhibited by graying at the margin of ceramic restorations. Graying was observed in 5% of the restorations. In half of these, the graying was minimal; in 1% the graying was moderate; and in the final 1.5%, the graying was more severe, requiring the replacement of about 35 restorations. It is important to note that the discoloration seemed to get worse with time. Less discoloration was observed when the restorations were cemented with **RelyX Unicem 2**.

## Retention

One hundred and eight (4.8%) of the recalled restorations debonded over the 15-year evaluation period (Figure 3). In 90% of these debonds, the cement was in the restoration and not on the prepared tooth. It was not unusual to notice grey or black stain on many of the debonded restorations.

Fig. 3: Results of 15-year recall of restorations cemented with **3M™ RelyX™ Unicem**.



## Summary:

**RelyX Unicem Self-Adhesive Resin Cement** has proven to be very reliable over the 15-year recall period. This product received a 96% clinical performance rating.