

## SPECIAL REPORT

### ADHESION/BONDING

# Shofu's Array of Adhesives: Simple, Effective Bonding to Any Restorative Surface

**A**s a founder and past president of the American Academy of Cosmetic Dentistry and co-founder of the Canadian Academy for Esthetic Dentistry and the International Academy for Dental Facial Esthetics, George Freedman, DDS, understands dental adhesives. He points out three key areas that should be of significant interest to all clinical practitioners: how direct adhesives are used to bond to natural tooth structure; which indirect adhesive cements should be used for luting porcelain, lithium disilicate, or zirconia; and how to adhesively repair fractured, broken, or otherwise damaged teeth and restorations.

To address these issues, Freedman relies on a variety of products available from Shofu.

Providing high bond strength with exceptional convenience, BeautiBond® is a 7th generation, self-etch adhesive Freedman uses for a wide range of direct clinical indications. “BeautiBond is a single-step solution to a better, more effective bonding to both enamel and dentin. It has great ease of use, excellent bond strength, and I get no reports of postoperative sensitivity,” he acknowledges.

Historically, Freedman says, self-etching 6th generation dental adhesives have offered inconsistent bonding, especially to

enamel. “However, BeautiBond includes dual adhesive monomers that facilitate predictable, long-term bonding to both enamel and dentin,” he explains. “BeautiBond’s phosphonic acid monomer enhances enamel bonding, while its carboxylic acid monomer facilitates reliable bonding to dentin.”

Allowing fast, easy application, BeautiBond is also insensitive to residual moisture on the surface of the preparation, Freedman continues. “The bond strength on both the dentin and enamel are essentially the same regardless of whether the prepared surfaces are moist or dry. In other words, the issue of moist bonding is no longer a clinical problem.” Additionally, a thin, 5- $\mu$ m film thickness encourages excellent adaptation of esthetic restorative materials.

“With a HEMA-free composition and the need for only one coat, no agitation, and no etch—just apply and cure—it couldn’t be easier,” Freedman says of using BeautiBond.

The Toronto-based practitioner, who limits his practice to esthetic dentistry, also trusts Shofu’s Ceraresin Bond for use in the repair of porcelain, ceramics, and crown-and-bridge materials. “The universal feature of Ceraresin Bond enables adhesion to *all* substrates, forming an effective and predictable interface between ceramics, direct and

indirect composites, cold-curing resins, denture teeth, and light-curing reparative materials,” he says. In explaining its simplicity he adds, “This is a single reparative adhesive with one protocol that covers all potential clinical eventualities, simplifying both the repair technique and supply management.”

Dental cements, which play a vital role in dentistry, have progressed dramatically over the years, Freedman notes. Today’s adhesive cements, he says, are able to bond to both the restoration and the tooth, helping to stabilize the entire restorative system. An ideal cement, he suggests, offers simple, effective adhesion to all dental and restorative surfaces (enamel, dentin, ceramics, and metal) and requires little or no technique-sensitivity—eliminating chairside mixing, multiple-step applications, the need for wetting and drying, and long self-cure setting times.

Shofu, Freedman says, offers several cements to meet these criteria. BeautiCem SA is a self-etch, self-adhesive resin cement incorporating the company’s proprietary bioactive Giomer dual-cure technology with high bond values. Its auto-mixing syringe eliminates hand mixing, and it is easy to clean up.

ResiCem™ Universal Resin Cement is specifically designed for luting zirconia and alumina and, according to Shofu, demonstrates the highest reported bond strength of any resin cement in these applications.

Lastly, MonoCem® is a self-adhesive resin cement with fluoride that offers a 3-minute set time, bonds to all substrates with high retention values, and eliminates sensitivity.

In Freedman’s experience with Shofu adhesive products, his patients always walk away satisfied. “I get many compliments. Patients are happy with the esthetics and they don’t have any postoperative sensitivity.”



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\*M.A. LATTA et al., J Dent Res 92 (Spec Iss A):176524, 2013 (www.dentalresearch.org). Xeno IV is a registered trademark of Dentsply

\*\*Dr. Camila Sabatini independent study SUNY at Buffalo, School of Dental Medicine Department of Restorative Dentistry, Buffalo, NY, USA. Presented at the International Dental Adhesives Meeting.