

THE DENTAL ADVISOR™

“Improving Patient Care Through Research & Education”



Photography by Dr. Charles McLaren

SELF-ADHESIVE RESIN CEMENTS AND ESTHETIC RESIN CEMENTS

Self-adhesive resin cements eliminate the need for separate etchants and primers for bonding ceramic and metal restorations to tooth structure. These cements are available in tooth-colored, translucent and opaque shades and are dual-cured. Esthetic resin cements require a bonding agent for adhesion to tooth structure and separate primers for bonding all-ceramic restorations. These cements are available in a variety of VITA™ and translucent shades and most are dual-cured. Special light-cured esthetic resin cements are available for bonding all-ceramic veneers.

This issue of THE DENTAL ADVISOR discusses and recommends self-adhesive and esthetic resin cements and gives clinical tips for using these cements.

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Self-adhesive Resin Cements

Dentistry is rapidly moving from the cementation of PFM and gold restorations with traditional cements (glass ionomer, resin-modified glass ionomer, zinc phosphate, zinc polycarboxylate) to bonding of all-ceramic restorations with resin-based cements. Self-adhesive resin cements eliminate the need for separate etchants and primers for bonding to tooth, alloy or ceramic substrates.

Characteristics

- Packaging includes capsules, auto-dispensed and auto-mixed paste/paste syringes.
- May require refrigeration – bring to room temperature before using.
- Self-etching – no phosphoric acid or special primer needed.
- Dual-cured – can be light- or self-cured.
- Fluoride-releasing.
- Usually available in universal, translucent and opaque shades.

Recommended Uses

- Cast alloy crowns, bridges
- Ceramo-metal crowns, bridges
- High-strength ceramic (alumina, zirconia) crowns, bridges, inlays, onlays
- Posts (cast metal, ceramic, fiber-reinforced resin)

Composition and Reaction

Self-adhesive resin cements are composed of diacrylate resins with acidic and adhesive groups and glass filler. They are usually dual-cured resins that can be light activated and can self-cure. During setting, self-adhesive resin cements typically undergo a change in pH from acidic (pH 2) to less acidic (pH 5-6). The early acidity of the cement allows it to be self-etching.

Properties

Self-adhesive resin cements bond to tooth structure and other materials with low (5-8 MPa) to medium (8-15 MPa) bond strengths. The separate use of a bonding agent is not recommended. Although bonding agents may be compatible with self-adhesive resin cements, their use makes the manipulation more complicated and does not dramatically improve bond strength to tooth structure. Flexural strength and modulus measured when these cements are light activated are generally higher than when they are self-cured. Higher bond strengths can be obtained with esthetic and adhesive resin cements that are bonded with separate bonding agents or primers. Self-adhesive resin cements are reported to have values of linear expansion of 0.5 to 1.5% over two months. Use of these cements with all-ceramic restorations is not a concern.

Clinical Observations

Self-adhesive resin cements have a lower incidence of sensitivity than adhesive or traditional crown and bridge cements. Marginal staining of self-adhesive resin cements has been reported to be lower than that of traditional cements. A recent survey of Clinical Consultants of THE DENTAL ADVISOR indicated that self-adhesive resin cements were most commonly selected for cementation of high-strength (zirconia) all-ceramic restorations.

Clinical Tips

- Don't over dry the tooth - moisten with water if needed.
- To minimize staining at the enamel-ceramic margin, etch the enamel with phosphoric acid for 10 seconds before cementation.
- Some cements (***Embrace Wetbond Resin Cement***, ***Pulpdent***; ***MonoCem***, ***Shofu***) require a gel barrier for complete setting.

- Use light activation whenever possible - dual-cured cements typically have increased flexural strength and bond strength when activated with a light.
- Translucent shades may be sensitive to ambient light.
- Excess cement is easy to remove after several seconds of exposure to a curing light, but hard to clean up if you wait too long.
- Contraindicated where there is not enough retention – use adhesive resin or esthetic resin cements.
- Should not be applied directly on exposed pulp or dentin that is close to the pulp.
- Some products provide extension tips for the capsules for post cementation.
- Do not use a lentullo spiral to spin cement into a canal space for post cementation. Place the cement on a post before placing in the canal.
- Use a silane primer with silica-based all-ceramic restorations (**3G All Ceramic System**, *Pentron Ceramics*; **Cerpress SL**, *Leach and Dillon*; **Creation CP**, *Jensen Dental*; **IPS e.max CAD**, *Ivoclar Vivadent*; **IPS e.max Press**, *Ivoclar Vivadent*; **IPS Empress CAD**, *Ivoclar Vivadent*).



BisCem (Bisco)



SmartCem2 (DENTSPLY Caulk)

Self-adhesive Resin Cements

Product	Company	Type of Cure	Working Time, min.	Setting Time, min.	Clinical Rating
3M ESPE RelyX Unicem Self-Adhesive System - Aplicap	3M ESPE	DC, SC	2:00 Aplicap, 2:30 Maxicap	DC-20 sec; SC-5.0 min	98%
3M ESPE RelyX Unicem Self-Adhesive System - Clicker	3M ESPE	DC, SC	2:00	DC-20 sec; SC-5.0 min	97%
Bifix SE	VOCO America, Inc	DC, SC	2:00	LC-0:20-0:40; SC-3:00	NE
BisCem	Bisco Dental Products	DC, SC	1:15	8:00	90%
Breeze	Pentron Clinical Technologies	DC, SC	1:30	3:30-4:00	92%
Clearfil SA Cement	Kuraray America, Inc.	DC, SC	1:00	LC-0:20; SC-5:00	NE
Embrace WetBond Resin Cement	Pulpdent	DC, SC	Indefinite	DC-0:20-0:40 SC-7:00-8:00,	NE
G-CEM	GC America	DC, SC	2:15	DC-0:20-0:40, SC-6:30	88%
G-CEM Automix	GC America	DC, SC	2:15	DC-0:20-0:40, SC-6:30	CE
iCEM Self-adhesive	Heraeus				NE
Maxcem Elite	Kerr Corporation	DC, SC	1:45	2:45	NE
MonoCem	Shofu	DC, SC	Indefinite	7:00	NE
seT	SDI (North America), Inc	DC, SC	2:00	5:00	96%
SmartCem2	DENTSPLY Caulk	DC, SC	2:00	LC-0:50-0:70; SC- 6:00;LC-0:20-0:40; SC-3:00	NE

*SC = Self-cured, DC = Dual-cured, NE = Not Evaluated, CE = Currently Evaluating.
For more information on self-adhesive resin cements, please visit www.dentaladvisor.com*

Esthetic Resin Cements

The selection of a resin cement for an all-ceramic restoration depends on:

- Type of restoration
- Type of ceramic
- Translucency of ceramic
- Amount of retention

Esthetic resin cements are tooth-colored or translucent and are available in many VITA™ shades. These cements may be packaged in auto-mix syringes and are typically dual-cured; many products have try-in pastes. Among the dual-cured cements, the light- and dual-cured modes typically are stronger and more rigid than the self-cured mode. Some light-cured products (**3M RelyX Veneer**, **3M ESPE**; **GrandiO Flow Veneer Kit**, **VOCO America**; **Variolink Veneer**, **Ivoclar Vivadent**) are intended for cementation of ceramic veneers.

Ideal Kit Contents

- 3-5 shades, including clear and opaque shades
- Viscosity - low and medium-high
- Try-in pastes with matching shades
- Etchant - hydrofluoric acid gel
- Bonding agent
- Silane primer

Clinical Tips

Cementation Procedure

- Select the shade using cured cement or matched try-in paste.
- Follow manufacturers' recommendations for etching, bonding and cementation.
- Bonding requires strict isolation to avoid contamination.
- Do not overdry the tooth - moisten with water if needed.
- Thin the bonding agent with a stream of air to remove the solvent and to minimize pooling. Solvent left in the bonding agent can inhibit setting and affect the bond strength of the resin cement. Excess bonding agent may cause restoration to seat poorly or fracture.
- Quick light curing at the margins allows easy removal of excess.

Ceramic Inlays, Onlays, Full Crowns

- Must use dual- or self-cured resin cement to ensure complete cure; bonding agent must be compatible with a dual- or self-cured system.
- Silane primer (**Clearfil Silane Kit**, **Kuraray America**; **Versa-Link**, **Sultan Healthcare**) is a wetting/coupling agent that maximizes the bond between the ceramic and resin cement. Note - silane products mixed by the dentist have a limited shelf life. Stabilized silane primers are premixed and have a longer shelf life.
- Etch internal surface of traditional all-ceramic restorations with hydrofluoric acid gel (laboratory); internal surface of high-strength ceramic (zirconia) restorations cannot be etched – use ceramic primer (**Clearfil Ceramic Primer**, **Kuraray America**; **Metal/Zirconia Primer**, **Ivoclar Vivadent**).

Ceramic Veneers

- Can use either light- or dual-cured resin cement.
- Must use a silane primer.
- Etch internal surface of veneer with hydrofluoric acid gel (laboratory).
- Try-in pastes can be removed with water or alcohol without affecting bond strength of cement to veneer.
- For veneers thinner than 1.25 mm, light cure bonding agent and resin cement at the same time. For veneers thicker than 1.25 mm, light cure the bonding agent before applying the resin cement.

Adjuncts to Cementation

- **OptraGate** (**Ivoclar Vivadent**) - use to provide retraction and improved access to preparation
- **NTI Serrated Diamond Finishing Strips** (**AXIS Dental**) – use to remove cement from interproximal contacts.
- **CeriSaw** (**Den-Mat Holdings LLC**) - use to remove excess set cement
- **Odyssey Navigator Laser** (**Ivoclar Vivadent**) - use uninitiated mode to stop bleeding instead of packing cord, if area is small.

NEW!

Product Showcase

Introducing the Product Showcase!

We are pleased to announce a new area of www.dentaladvisor.com showcasing new products from our manufacturer partners.

The items listed in the Product Showcase are from manufacturers who have committed to clinical evaluations with THE DENTAL ADVISOR. Click on the icon on our home page to read up on these exciting items. Also, look for these new products and equipment in upcoming trade shows and in future issues of THE DENTAL ADVISOR.

Esthetic Resin Cements

Product	Company	Type of Cure	Working Time, min.	Flexural Strength	Flexural Modulus	Clinical Rating
3M ESPE RelyX Veneer	3M ESPE	LC	unlimited without light	High	Medium	98%
Adherence Self Cure and Dual Cure Permanent Cements	Septodont	DC, SC	5.5	Currently testing	Currently testing	NE
Aegis Crown & Bridge Cement	Bosworth	DC	3.0-5.0	NT	NT	86%
Bifix QM	VOCO America	DC/LC	6-Apr	LC-high	LC-high	87%
Bistite II DC	Tokuyama Dental	LC/DC	4	DC-high, SC-med	DC-high, SC-high	91%
Calibra	DENTSPLY Caulk	DC/LC/SC	2.5	DC-high, SC-high	DC-high, LC-med, SC-med	91%
Cement it Universal C&B Resin Cementation System	Pentron Clinical Technologies	DC/ LC	1.5	DC-high, LC-high	DC-medium, LC-medium	96%
CHOICE 2	Bisco Dental Products	LC	1:15	NT	NT	NE
Clearfil Esthetic Cement	Kuraray America	DC	3	DC-high	DC-high	96%
Duo-Link	Bisco Dental Products	DC	2	NT	NT	92%
GrandiO Flow Veneer Kit	VOCO America	LC	unlimited without light	NT	NT	90%
Illusion	Bisco Dental Products	DC/LC/SC	2	DC-high, LC-high, SC-high	DC-high, LC-med, SC-high	90%
Insure	Cosmedent	DC	8.5-10	Currently testing	Currently testing	91%
Lute-It Esthetic Luting System	Pentron Clinical Technologies	DC/LC/SC	2.5	DC-high, LC-high, SC-high	DC-high, LC-med, SC-high	97%
NX3 Nexus Third Generation	Kerr Corp.	DC/LC	DC: 1.30	LC-high	LC-medium	97%
ParaCem Universal DC	Coltene/Whaledent	DC	3:00	NT	NT	86%
Variolink II	Ivoclar Vivadent	DC/LC	3.5	DC-high, LC-high, SC-high	DC-high, LC-high, SC-med	96%
Variolink Veneer	Ivoclar Vivadent	LC	2.0-3.0	Medium	Low	97%
Vitique	Zenith Dental/DMG	DC/LC	2	NT	NT	87%

SC - Self-cured, DC = Dual-cured, LC = Light Cure, NT = Not Tested, NE = Not Evaluated
For more information on esthetic resin cements, please visit www.dentaladvisor.com



Aegis Crown & Bridge Cement
(Bosworth)



Bistite II DC
(Tokuyama Dental)



Duo-Link (Bisco Dental Products)

KromaFaze Singles + + + +

DUX Dental
800.833.8267 • 805.488.1122
www.duxdental.com

Request a Sample:
Visit www.dentaladvisor.com to request
a sample or more information!



Description

KromaFaze Singles are single-use impression packages of dust-free, colorimetric alginate powder. The alginate is packaged in 18-g, sealed foil envelopes (6.4 x 15 cm), with an incorporated water measure. To use **KromaFaze Singles**, the clinician taps the powder to the bottom of the envelope and then cuts the package at the dotted line.

The powder is placed into a mixing bowl and the top portion of the envelope is used to measure the water. Standard protocols are used for mixing. Mixing time is 30 seconds, working time is 1:45 and setting time is 2:30 from the start of mixing. Twenty-nine consultants used **KromaFaze Singles** 420 times during the evaluation period. This product received an 87% clinical rating.

Suggested Retail Cost

- \$84.00/125 unit-doses

LuxaBond® Total Etch + + + +

Zenith Dental/DMG
800.662.6383 - 201.894.5500
www.zenithdmg.com

Description

LuxaBond Total Etch is a 4th-generation, dual-cured enamel and dentin adhesive for bonding resin-based restoratives. After etching with 37% phosphoric acid and rinsing, a coat of **Pre-Bond** is worked into the moist tooth surface and air-dispersed before applying the mixture of Bond A and Bond B for 20 seconds. Then air is applied for dispersion of excess resin.

LuxaBond Total Etch is packaged with a 5-mL bottle of **Pre-Bond**, a 5-mL bottle each of Bond A and Bond B, 2-mL of Etch Gel, and accessories. **LuxaBond Total Etch** was evaluated by 27 consultants in 676 uses. This product received an 88% clinical rating.

Suggested Retail Cost

- \$228.35/kit

Product Features

Clinicians rated the ease of dispensing, application, and viscosity of the various materials of **LuxaBond Total Etch** as very good. The material wets the tooth readily. They also liked its overall usefulness and versatility. Matrix band removal is easy. No debonds were reported nor was postoperative sensitivity a problem. The several steps required of a 4th-generation bonding system, compared to 5th-, 6th-, and 7th-generation products, necessitates a longer application time. Eighty-five percent of evaluators rated **LuxaBond Total Etch** as equal to or better than the bonding system they currently use, 37% would switch to **LuxaBond Total Etch**, and 67% would recommend it to a colleague.



Consultants' Comments

- ◆ "Useful for a wide variety of procedures."
- ◆ "Chemical set is very predictable."
- ◆ "As with all 4th-generation systems, application time is longer."
- ◆ "In my experience, one seldom sees marginal staining with 4th-generation products."

Clinical Tips

- After placing bonding liquid, blot the cavity with a dry brush to avoid pooling.
- Use a paper absorbent point to remove excess bonding liquid from post preparations.
- Curing lights should have a wavelength of 450 nm and an intensity of at least 400 mW/cm². ■

KromaFaze Singles + + + +

Product Features

Consultants reported **KromaFaze Singles** were easily dispensed from the foil packages. The color change is a useful feature and the mix lacks bubbles, resulting in a good impression. The detail of the impressions and the resulting models was rated highly. Using scissors to open the foil pouch and measuring the quantity of water with one end of the envelope are easily accomplished and give good results. Overall, **KromaFaze Singles** was judged less messy than conventional alginate products. Participants reported that the setting time was appropriate and that the procedure consumed less time than their usual methods. Eighty-nine percent of consultants found the **KromaFaze Singles** equal to or better than their current alginate. ■

Consultants' Comments

- ◆ "I like the standardization of powder/water ratios."
- ◆ "Water and powder combine well."
- ◆ "I had quality impressions with every use."
- ◆ "Very consistent results."
- ◆ "My staff was very pleased with this product."
- ◆ "Not enough material for a full-arch maxillary impression."
- ◆ "We use small mixes a lot so this amount seems wasteful."

Identic Singles + + + +

DUX Dental

800.833.8267 • 805.488.1122

www.duxdental.com

Request a Sample:

Visit www.dentaladvisor to request a sample or more information!



Description

Identic Singles are single-use impression packages of dust-free, fast-set alginate. Each package contains 18 g of alginate powder in a sealed foil package. The package is intended to be cut with scissors where marked, with the top portion becoming the water measure once removed. This packaging eliminates the need for the traditional alginate canister, powder scoop and water vial.

Identic Singles are designed to ensure correct mixing ratios for a consistent mix every time. **Identic Singles** have a mixing time of 30 seconds, a working time of 1:45 and a setting time of 2:20 from the start of mixing. The material has a pink color with a cinnamon scent and taste. Thirty consultants evaluated **Identic Singles** in over 620 impressions. This product received an 86% clinical rating.

Suggested Retail Cost

- \$84.00/125 unit-doses

Product Features

Identic Singles reduce inconsistent measuring of alginate powder and water. A popular feature of the packaging is the pre-measured powder, which eliminates dispensing spills that occur with traditional scooping of powder. The foil package requires scissors to open and can be slippery when filling with water with gloves on. The amount of material in a single package is enough to take one quadrant or small full-arch impression. **Identic** mixes to a smooth, creamy consistency that has more body than many other alginate materials.

Consultants' Comments

- ◆ "Less clean-up than other alginate products."
- ◆ "Material mixed exceptionally creamy - less runny than other alginates."
- ◆ "Eliminates the problem of a missing powder scoop or water vial."
- ◆ "Great product for mobile dentistry setups and at dental schools!"
- ◆ "Good impression quality - no lumps, no voids."
- ◆ "Setting time is a little long for a fast-set material."

The setting time is longer than many clinicians would prefer for a fast-set alginate. The detail quality of the impression and of poured models is very good, with few voids. Fifty-two percent of consultants rated **Identic Singles** to be equal to or better than their current alginate impression product and indicated they would switch to this product. Sixty-one percent would recommend it to a colleague.

Clinical Tips

- The setting time can be reduced by using warmer water.
- Use two packages for a large full-arch impression. ■

3M ESPE Pentamix 3 + + + + +

3M ESPE
800.634.2249
www.3mespe.com

Description

The **3M ESPE Pentamix 3 Automatic Mixing Unit** is the newest in the *Pentamix* line from 3M ESPE. This smaller unit was designed to take up less counter space or to be installed directly on the wall. 3M ESPE also added activation buttons on both sides to increase ease of operation. A RFID (Radio-frequency identification) microchip has been added to the impression material's front cap so that the *Pentamix 3* unit will recognize the material and adjust the unit to dispense material faster than the *Pentamix 2* unit. The microchip is covered by an authentication label making sure the product is from 3M ESPE. The RFID chip on the front cap of the impression material is read by the device, identifying the material type to optimally mix the material. 3M ESPE recommends use of *3M ESPE Penta* impression materials for optimal performance; however, this unit is compatible with the materials for the *Pentamix 2* unit. Thirteen consultants used the *Pentamix 3* unit in making over 275 impressions. This product received a 96% clinical rating.

Suggested Retail Cost

- \$1,899

Editors' Observations

With the new, smaller design of the *Pentamix 3* unit, much less counter space is needed compared to the previous models. No consultants utilized the wall mount option. The increased speed was easily noticeable compared to previous *Pentamix* machines. Quicker dispensing resulted in more usable working time, which is especially valuable with fast-setting materials and full-arch impressions. Consultants noted that the material was dispensed quickly with no voids found in the material.



Consultants' Comments

- ◆ "This new unit moves! Easily twice as fast as the *Pentamix 2*."
- ◆ "The unit is solid and well constructed."
- ◆ "Dispenses putty with ease."
- ◆ "Buttons on both sides make the unit easier to use."

In this evaluation, most consultants used *Imprint 3* product for the impression material; other materials used were *Impregum* and *Aquasil* products. *Pentamix 3* unit performed flawlessly with all of the different impression materials used. Ninety-two percent of the consultants found the *Pentamix 3* unit to be better than their current mixing unit, while 84% of consultants said they would switch to the **3M ESPE Pentamix 3 Automatic Mixing Unit**. ■

Synergy D6 1-year Clinical Performance Report + + + + +

Coltene/Whaledent, Inc.
800.221.3046 • 330.916.8800
www.coltenewhaledent.com

Description

Synergy D6 is a resin composite system composed of six dentin duo shades (D6 designation) and two enamel shades. The material is a sculpable, radiopaque, highly filled nano-hybrid composite for restoration of anterior and posterior teeth.

The average filler particle size is 0.6 µm with a range of particle sizes from 0.02 to 2.5 µm. The filler content is 80% by weight and 65% by volume. The dentin duo shades (White Bleach, A1/B1, A2/B2, A3/D3, A3.5/B3, C2/C3) are created by combining Vita shades with similar color (hue), intensity (chroma) and lightness/darkness (value). The two enamel shades (Universal and White Opalescent) have high translucency. The composite can be cured with halogen or LED light-curing units. **Synergy D6** is packaged in kits containing eight, 4-g syringes or 80, 0.25-g unit-dose tips; *One Coat 7.0 Bond*; and accessories. This product received a 96% rating for clinical performance at one year.

Synergy D6 1-year Clinical Performance Report + + + + +

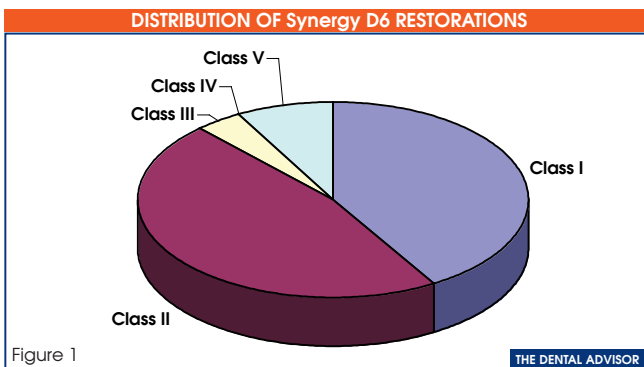


Consultants' Comments

- ◆ "Composite surface is smooth."
- ◆ "The duo shade system is simple to use."
- ◆ "Restorations blend best when an enamel shade is used on the surface."

Clinical Evaluation Protocol

- 279 **Synergy D6** restorations were placed in 141 patients. Anterior and posterior restorations were placed (Figure 1).
- 126 restorations were available for evaluation of clinical performance at one year after placement.
- *One Coat Self-Etching Bond* was used to bond all restorations.
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.



Clinical Observations

Resistance to Fracture

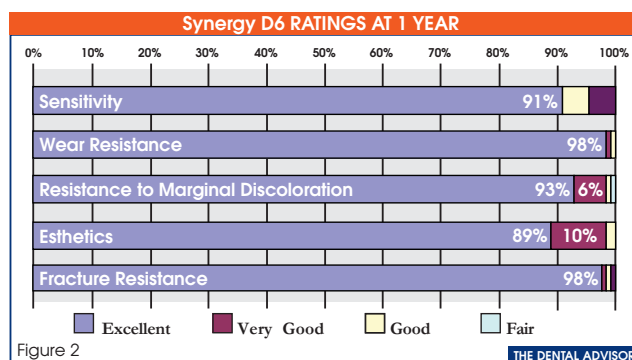
Ninety-eight percent of **Synergy D6** restorations recalled showed no chips or fractures (Figure 2). Two restorations were chipped, requiring refinishing. Only one restoration was fractured, requiring replacement.

Esthetics

Synergy D6 dentin shades have moderate opacity and effectively block out underlying stained dentin. When the dentin shades were used alone, the finished restorations were rated lower, with consultants noting that the appearance was too opaque or dull. In the majority of cases, one of the translucent enamel shades was layered on top, resulting in more esthetic restorations. Ninety-nine percent of restorations were rated very good to excellent (Figure 2).

Resistance to Marginal Discoloration

One Coat Self-Etching Bond was used to bond **Synergy D6** restorations; no additional etching of peripheral enamel was done at the time of placement. Ninety-three percent of restorations had no visible staining at the margins (Figure 2). Light stain along the margins was noted in six percent of restorations. Two percent of restorations had moderate stain, but none were replaced.



Wear Resistance

Synergy D6 exhibited excellent wear resistance. Ninety-eight percent of restorations received ratings of excellent (Figure 2), as they exhibited no visible signs of wear.

Sensitivity

With few exceptions, no post-operative sensitivity was reported by patients when they were asked at six months and one year (Figure 2). One posterior restoration was replaced at six months due to temperature sensitivity. Two patients reported mild sensitivity at six months that resolved without further treatment.

Summary

Synergy D6 was used with the 6th-generation bonding agent, *One Coat Self-Etching Bond*, in restoring 279 teeth in 141 patients. The restorations were evaluated as the patients reported for their next scheduled dental appointments, approximately six months and one year after placement. Six restorations were replaced during the first year. Four of the replacements were due to caries on another surface of the tooth and were unrelated to the filling material. One posterior restoration (tooth #15-MO) was replaced at six months due to sensitivity and one posterior restoration (tooth #29-MOD) fractured at the distal marginal ridge, requiring replacement. Marginal staining was minimal, and no wear was observed on the restorations. Overall, **Synergy D6** was highly rated for producing esthetic anterior and posterior restorations. ■

Bifix QM + + + +

VOCO America, Inc.
888-658-2584
www.vocoamerica.com

Description

Bifix QM is a dual-cured, radiopaque, fluoride-containing, resin luting system for cementation of metal, composite and ceramic restorations. It can also be used for adhesive cementation of posts and etched metal bridges. **Bifix QM** is packaged in 10-g *QuickMix* syringes and is available in three shades with corresponding try-in pastes: universal, transparent and white-opaque. The kit contains one syringe of cement in each shade, three syringes of try-in paste, *Ceramic Bond*, and accessories.



The 7th-generation adhesive *Futurabond DC* single dose is supplied in a separate kit. The working time is 2.5-3.5 minutes with a setting time of 3 minutes after intraoral placement. Seventeen consultants evaluated **Bifix QM** in more than 230 clinical applications. This product received an 87% approval rating.

Manufacturer's Instructions

The written instructions are supported by a well-labeled, illustrated, laminated card for quick reference.

Packaging/ Completeness of Kit

The cement and adhesive are packaged in separate boxes, which are contained within an outer cover. The packaging could be improved by placing all the materials in one well-organized container.

Consultants' Comments

- ◆ "Complete kit which is easy to use, but packaging could be improved."
- ◆ "The adhesive, *Futurabond DC*, saves steps and works well with the cement."
- ◆ "Work fast when cementing a post."
- ◆ "Remove excess before set, or tack cure and then remove excess."

Comfort Plus Premium Saliva Ejectors + + + +

Crosstex
888.276.7783 • 631.582.6777
www.crosstex.com

Description

Comfort Plus Premium Saliva Ejectors have a soft tip designed for increased performance with greater patient comfort. The smooth, bullet-shaped tip is firmly attached to a white-colored tube. The tube is easily adjusted or bent to custom fit intraorally. The tip is designed with long, tapered slots on the sides but not on the end. This design increases suction efficiency and helps prevent locking of tissue at its end. **Comfort Plus Premium Saliva Ejectors** are single-use and are available in bags of 100. The tips were used in over 1300 clinical procedures by 33 consultants. This product received an 86% clinical rating.

Suggested Retail Cost

- \$5.95/100 count bag

Product Features

The smooth tips of **Comfort Plus Premium Saliva Ejectors** were well received by patients and practitioners. Consultants found that there was little to no locking on to tissue, resulting in a

Consultants' Comments

- ◆ "I loved that they did not lock on to the patient's tissue."
- ◆ "Without holes in the end, the tip did not clog as easily. Great feature!"
- ◆ "My patients were very comfortable when I was using this product."

more comfortable experience for the patient. Hygienists and solo practitioners particularly liked **Comfort Plus** because the saliva ejector did not grab or suction the soft tissue, making working without an assistant easier. The tubes bend easily and maintain their position, increasing the comfort of the patient and improving the field of vision. The opaque white color of the tube is easily seen in the mouth and masks the sight of evacuated fluids. Consultants reported that suction was impaired with a shallow pool of saliva due to the position of the slots on the tip. Eighty-two percent of consultants found that **Comfort Plus Premium Saliva Ejectors** were equal to or better than their current saliva ejectors, while 61% would recommend the product to a colleague.

Clinical Tip

- Tipping the saliva ejector to the side will help suction in shallow pools of saliva. ■

Bifix QM + + + +

Refrigeration is not necessary but is recommended. The kit contains all the components necessary for resin cementation of any restoration.

Shades Available

The three shades supplied in the kit are adequate for most cementation procedures. The shades, however, are limited when cementing very translucent porcelain veneers or pressable ceramics when shade modification is required. The color of the try-in pastes corresponds well to the cement shade after curing. The try-in paste can be easily removed from the restoration and tooth surface with water.

Homogeneous Mix and Viscosity of Cement

Bifix QM produces a consistent mix with a creamy consistency and good flow, which coats both the tooth and surface of the restoration well. The viscosity of the cement allows complete seating of the restorations; however, a few consultants reported that the cement was too runny.

Working Time/Setting Time

Both the working and setting times are more than adequate, even when cementing multiple restorations.

The setting time can be controlled by light curing for 20 seconds at the margins. The cement should be applied directly into a root canal using intraoral tips, not a lentulo spiral. Additionally, **Bifix QM** can be applied to the surface of the post before the post is inserted into the canal. The occlusal surface should be light cured to fix the post.

Removal of Excess Before and After Set

The unset cement can be removed using a microbrush, but as with all resin cements, the completely set cement is difficult to remove. The set cement does not come off in one piece but tends to crumble during clean-up.

Esthetics

The available shades are adequate for most clinical applications. A few consultants commented that shade selection was limited. The translucent shade gave a nice, natural appearance when used to cement veneers that did not require shade modification.

Retention

Two consultants reported a total of four debonds during the evaluation period. ■

Dam It! + + + +

Danville Materials

800.827.7940 • 925.973.0710

www.danvillematerials.com

Description

Dam It! is a posterior dam and periphery extension for use on impression trays. The dam is a self-adhesive membrane packaged in a tape-style dispenser. The main use for **Dam It!** is along the posterior border of an upper tray to prevent excess impression material from flowing out of that area, thereby capturing greater detail on the distal surface of second molars and providing patient comfort by reducing gagging. It is indicated for use on full-arch and quadrant trays. To use **Dam It!**, the membrane is pulled from the dispenser and the cutter is pushed down to tear off the appropriate amount to accommodate both sides of the tray. The membrane is marked along its length with a dotted line for alignment with the edge of the impression tray. After the membrane is adhered around the back of the tray, slits can be cut where needed to allow some flexibility to the dam. The impression tray is then filled with the impression material of choice. Twenty-five consultants used **Dam It!** with over 400 impressions. This product received an 86% clinical rating.

Suggested Retail Cost

- \$12.95/roll

Consultants' Comments

- ◆ "Nice product for gaggers."
- ◆ "Great niche product."
- ◆ "I took two impressions on one patient. He gagged without **Dam It!**, but was fine with it."
- ◆ "It didn't stick consistently."

Product Features

Dam It! is packaged in a handy tape dispenser with a retractable cutter. Consultants found that scissors were more efficient at cutting the material than the built-in cutter. **Dam It!** comes with easy-to-read, illustrated instructions. Consultants found the membrane adhered well to both metal and plastic trays and was equally effective with alginate and elastomeric impression materials. It very useful in capturing second molar detail, and it also reduced patients' gagging. Eighty percent of consultants rated **Dam It!** equivalent to or better than products they were currently using for posterior dam and periphery extension, 44% said they would switch to **Dam It!**, and 60% would recommend it.

Clinical Tips

- Dispense and apply **Dam It!** before donning gloves. Once the backing is peeled off of the membrane, it sticks to gloves.
- Cut three vertical slits in the membrane to help **Dam It!** conform to the curve of the palate. ■

Ivoclar Vivadent, Inc.
800.533.6825 • 716.691.0010
www.ivoclarvivadent.com

Description

bluephase® G2 is a cordless LED curing light used for the polymerization of dental materials. The unit has a light intensity of 1200 mW/cm² and a broad light spectrum suitable for curing all dental materials that cure in the wavelength of 380-515 nm. The built-in fan allows for extended curing times without shutting the unit down to cool. The lithium-polymer battery takes approximately two hours to charge a completely discharged battery, and then has a total run time of 60 minutes. The cordless handpiece can also be connected to the power cord of the charging base. A visible green light indicates the unit is charged. Audible beeps occur every 10 seconds during operation, and the light timer can be adjusted between 5 and 30 seconds. A radiometer that provides the user with a numerical reading of the light intensity is an optional accessory. **bluephase G2** can run in a high mode for curing materials, low mode for curing near the pulp, and soft mode (soft start) to ramp cure and minimize polymerization shrinkage. **bluephase G2** was evaluated by 11 consultants in over 600 clinical uses and received a 98% clinical rating.

Suggested Retail Cost

- \$1200 without radiometer
- \$1360 with radiometer

Equipment Features

bluephase G2 is an excellent curing light. The comfortable pistol grip was a favorite of both dental assistants and dentists.



Consultants' Comments

- ◆ "This is a great light!"
- ◆ "It's great to have one light that cures everything!"
- ◆ "The sleek design and power are great!"

The intuitive nature of the controls and ease of switching modes make this light simple to use. Easy access to all areas of the mouth is provided by the slim, swivel light guide. The docking station is stable and was used regularly by consultants to continually charge the unit between uses. Consultants were enthusiastic about the effectiveness of **bluephase G2** in curing all materials, including resin-modified glass ionomers, which is often a concern with other LED curing lights. The availability of **bluephase G2** with or without the radiometer is an advantage. Overall, 100% of consultants found **bluephase G2** to be equal to or better than their current LED curing light and 91% would recommend it to a colleague.

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