

THE DENTAL ADVISORTM

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An Editors' Choice award is given to products recognized by our editors as being a unique or significant product.

RATINGS

Excellent	+++++
Very Good	+++
Good	++



Photography by Sulabh Dhanuka

Provisional Composites and Liquid Polishes

Provisional restorations are used to maintain esthetics, function, and position of prepared teeth while the definitive restoration is being fabricated. They have many functions including providing pulpal protection, preventing enamel fracture, and sealing the prepared teeth. Additionally, they can also be used to establish proper vertical dimension and anterior guidance, aid in diagnosis and treatment planning, retain orthodontically moved teeth and act as prototypes for final restorations. Dentists can choose to apply a protective coating or liquid polish as the final step in the placement of provisional restorations. Provided in a variety of delivery systems, liquid polishes are designed to reduce chair-time and the number of polishing products and steps needed and to provide a long-lasting esthetic finish. In addition, liquid polishes may seal margins and microscopic cracks and fissures and provide resistance to staining from food and beverages.

This issue of THE DENTAL ADVISOR reports on provisional composites and the use of liquid polishes.

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Provisional Composites and Liquid Polishes

Provisional restorations close endodontic access openings and are interim replacement restorations for inlays, onlays, crowns and bridges. Provisional restorations should:

- Provide pulpal protection after tooth preparation.
- Maintain position of the prepared tooth to minimize final restoration adjustments.
- Provide occlusal function and aid in determining vertical dimension and anterior guidance where necessary.
- Be easily removed and cleaned for re-use if necessary.
- Have margins that do not impinge on gingival tissues.
- Provide strength and retention.
- Have good esthetics for patient confidence.

Select provisional materials based on their clinical use. Flexible provisional temporary materials are designed for inlay preparations. With increased emphasis and comprehensive restorative cases, provisionals are frequently worn for longer period of times. Additionally, provisional restorations help support gingival architecture during the healing of advanced periodontal and implant supported treatment options.

When provisionals are used in long-term cases, fracture strength and wear resistance become significant factors in selecting a material. If anterior units are involved, color selection, color stability, and stain resistance are also important factors guiding the selection of the provisional material.

Recommended Technique for Single Units

- Take an impression of the unprepared teeth with a quadrant or anterior tray (a dual-arch tray may be used with putty and bite registration materials).
- After tooth preparation, insert the matrix filled with provisional material over the teeth.
- Remove the matrix according to the manufacturer's recommended working time.
- Separate polymerized material from the matrix, trim with scissors, and replace it onto the prepared tooth to allow final set.
- Remove air-inhibited layer on the provisional with an alcohol gauze pad, and, if needed, internally with a round bur before polishing the exterior.
- Trim and contour the restoration with burs and discs.
- Store the in case the provisional is lost or fractured and requires replacement.

Telio® - Ivoclar Vivadent

Telio® - Ivoclar Vivadent, Inc., has announced **Telio**, a newly developed system of temporary restorative solutions for dentists, CAD/CAM users, and dental technicians. Featuring three lines of materials developed for shade and material compatibility - **Telio CS**, **Telio CAD** and **Telio Lab** - the **Telio** system addresses the needs of dentists and dental technicians for products that enable them to work together more cooperatively. Because the chairside and labside products are compatible, **Telio** enables exceptional collaboration between dentists and dental technicians across all phases of treatment.

In this issue of THE DENTAL ADVISOR, Dr. Peter Yaman answers questions about provisional restorations.



Dr. Peter Yaman

Q: What types of materials are used for provisional restorations?

A:

I. Composites (Bis-acryls) - Integrity Temporary Crown and Bridge Material, DENTSPLY Caulk; Luxatemp Fluorescence, DMG America

II. Poly methyl methacrylates - Duralay, Reliance Dental Mfg., Co.; Jet Tooth Shade, Lang Dental Mfg Co., Inc.; JetSet-4, Lang Dental Mfg Co., Inc.

III. Poly ethyl methacrylates - SNAP™ Provisional Crown & Bridge Resin, Parkell, Inc.; Trim, Harry J. Bosworth Co.

IV. VLC urethane dimethacrylates - Triad® Provisional Material, DENTSPLY Prosthetics

Q: What are the major differences between materials used for provisional restorations?

A: The methacrylates are polishable, inexpensive, have acceptable physical properties and good marginal fit. The disadvantages include high heat release, significant shrinkage, messiness, and distinctive odor. The composites (Bis-acryls) have low shrinkage, excellent strength and esthetics and no odor. The disadvantages include a sticky surface due to air-inhibited layer, brittleness in thin sections and higher cost compared to the methacrylates.

Q: Can provisional restorations prepared from composites (Bis-acryls) be repaired?

A: Repairing these materials can be easily done if the composite has not been adjusted or contaminated. Simply add more of the material or a flowable composite and light cure. If the provisional restoration has been adjusted or contaminated, follow these steps:

- Etch the surface of the provisional with phosphoric acid,
- Rinse and dry and place an adhesive on the surface, light cure,
- Add a flowable composite for the repair and light cure, and
- Adjust and polish.

Q: What is the advantage of using a provisional abutment with implants?

A: Use of a provisional abutment allows the clinician the ability to modify the preparation both extraorally and intraorally.

Q: Is there a provisional material that does not require the use of a matrix?

A: **3M ESPE Protemp Crown Temporization Material (3M ESPE)** is a set of preformed composite crowns in various sizes. The crowns are moldable to adapt to the prepared tooth, margins and occlusion.

What's New

3M ESPE Protemp™ Plus Temporization Material is a two-component composite with a new generation of fillers for fabrication of interim restorations. It is indicated for temporization of single- and multiple-unit crowns, bridges, inlays/onlays and veneers, including long-term provisional restorations. It is packaged in 50-mL automix cartridges and is available in five fluorescent shades: A1, A2, A3, B3 and Bleach. It received a clinical rating of 92%.



3M ESPE Protemp™ Plus Temporization Material (3M ESPE)



StructurPremium (VOCO America)

Liquid Polishes

A protective coating can be used to provide a glossy surface to a provisional restoration without the use of abrasive polishers. These coatings are most commonly referred to as liquid polishes (**BisCover LV, Bisco Dental Products; Easy Glaze, VOCO America; G-COAT PLUS, GC America; Lasting Touch Nano Technology Liquid Polish, DENTSPLY Caulk; SURFACE COAT, Kuraray America**). Liquid polishes are provided in a variety of delivery

Provisional Composites and Liquid Polishes

systems, they are designed to reduce chair-time and the number of polishing steps needed to provide a long-lasting esthetic finish. In addition to giving a smooth, glossy finish, liquid polishes may be used to seal margins of composite restorations.

Clinical Tips

- Cure the provisional and complete traditional finishing.
- Typically, apply one coat of liquid polish and light cure.
- After light curing, some products may require removal of the air-inhibited layer with alcohol. ■

Provisional Composites

Product	Company	Dispensing Method	Cure Method	Shades	Rating
3M ESPE Protemp Crown Temporization Material	3M ESPE	Pre-formed composite crowns	LC	1	95%
3M ESPE Protemp Plus Temporization Material	3M ESPE	Auto-mix cartridge	LC	5	92%
Beyond Temporary Crown & Bridge System	Ada Products Company/Direct Dental Service	Auto-mix cartridge; auto-mix syringe	SC	6	93%
Clip	VOCO America	Syringe, unit-dose	LC	1	89%
Cool Temp Natural	Coltene/Whaledent	Auto-mix cartridge; auto-mix syringe	SC	3	86%
Fill-In	Kerr Corporation	Auto-mix unit-dose syringe	SC	4	84%
InstaTemp Max	Sterngold	Auto-mix cartridge	SC	5	96%
Integrity Temporary C & B Material	DENTSPLY Caulk	Auto-mix cartridge, auto-mix syringe	SC	5	93%
Luxatemp Automix Plus	DMG America	Auto-mix cartridge	SC	5	94%
Luxatemp Fluorescence	DMG America	Auto-mix cartridge	SC	5	94%
Revotek LC	GC America	Stick	LC	1	86%
StructurPremium	VOCO America	Auto-mix cartridge	SC	8	92%
Systemp.C&B	Ivoclar Vivadent	Auto-mix cartridge	SC	5	91%
Systemp.inlay/onlay	Ivoclar Vivadent	Syringe, unit-dose	LC	2	92%
TempSpan Dual Cure Temporary C&B Material	Pentron Clinical	Auto-mix cartridge	DC	7	82%
Temphase	Kerr Corporation	Auto-mix cartridge	SC	5	88%
Ultra Trim	Harry J. Bosworth Co.	Auto-mix cartridge	SC	3	82%
Venus Temp C&B	Heraeus	Auto-mix cartridge	SC	5	86%

Liquid Polish

Product	Company	Dispensing	Type of Light Cure	Clinical Rating
BisCover LV	Bisco Dental Products	Bottle	Halogen, LED, PAC	95%
Clear Check SLP	SHOFU	Syringe	All	86%
EMBRACE WetBond Seal-n-Shine	Pulpdent	Bottle, syringe	All	91%
G-COAT PLUS	GC America	Bottle	Halogen, LED	95%
Gorilla Seal	Bosworth Company	Bottle, syringe	Halogen	86%
Lasting Touch Nano Technology Liquid Polish	DENTSPLY Caulk	Bottle, unit-dose	Halogen, LED	87%
SURFACE COAT	Kuraray America, Inc.	Bottle	Halogen, PAC	91%
V3 Ring Sectional Matrix System	Triodent Ltd.	Sectional		96%

Translating the Science

Comparing the Gloss of Liquid Polishes

Natural-looking restorations should be smooth and have a high gloss. THE DENTAL ADVISOR Biomaterials Research Center measured the gloss of liquid polishes applied to discs of provisional composites. Several manufacturers (see Table) provided their liquid polish and a provisional composite. The provisional composite was molded into a disc 10 mm diameter and 2 mm thick. One side was molded against a smooth Mylar sheet to create a consistently smooth surface. This surface was then roughened with a carbide bur. Sets of roughened specimens were then either polished with a two-step disc polishing system or coated with a liquid polish following the manufacturer's instructions. Gloss was measured using a glossmeter (Rhopoint Novo-curve Small Area Glossmeter), which measures the intensity of a constant source of light reflected at a specific angle from a specimen (n=5, gloss units - GU). Use of the liquid polishes improved the gloss over the use of a two-step disc polishing system by between 35% and 60%. The gloss produced by all of the liquid polish systems tested was statistically equivalent to or greater than the gloss generated by molding against Mylar.

Liquid Polish	Provisional Composite	Gloss (GU) Molded Against Mylar	Gloss (GU) after Two-step Polishing	Gloss (GU) after Liquid Polish
BisCover LV (Bisco Dental Products)	PRO-V FILL (Bisco Dental Products)	76	57	87
G-COAT PLUS (GC America)	Luxatemp Fluorescence (DMG America)	85	55	88
SURFACE COAT (Kuraray America)	Luxatemp Fluorescence (DMG America)	90	56	89
Easy Glaze (VOCO America)	Structur Premium (VOCO America)	79	69	93

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You can also share our main topic articles and Clinical Evaluations on facebook, twitter, your blog, or via e-mail with the click of a button!

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3M ESPE RelyX Unicem Self-Adhesive Universal Resin Cement

7-year Clinical Performance + + + + +

3M ESPE
800.634.2249
www.3mespe.com

Description

3M ESPE RelyX™ Unicem Self-Adhesive Universal Resin Cement is a dual-cured resin cement. It is self adhesive, requiring no separate etching, priming or bonding. The cement is filled 72% by wt and contains fluoride. **RelyX Unicem** is available in two capsule sizes (*Aplicap* and *Maxicap*) in shades A1, A2, A3, opaque, white opaque, and translucent. **RelyX Unicem** is also available in a paste/paste formulation delivered through the *Clicker*. **RelyX Unicem** is indicated for the cementation of silica-based and high-strength ceramics, PFM and metal restorations, crowns, bridges, inlays, onlays, and endodontic posts. It is also recommended for cementing CAD/CAM restorations. Working time is 2 minutes for the *Aplicap* and the *Clicker* and 2.5 minutes for the *Maxicap*. The *Aplicaps* have enough material to cement one or two restorations, while the *Maxicap* has enough material for up to three to six restorations. This product received a 99% clinical rating.

Clinical Evaluation Protocol

More than 6000 restorations have been cemented with **RelyX Unicem** over the past 7.5 years at Enspire Dental by four dentists. The restorations include ceramic inlays, onlays, bridges, PFM crowns, posts, and CAD/CAM restorations (Figure 1). 1,458 restorations were available for recall over a six-month period (Figure 2).

Categories evaluated at recall included: postoperative sensitivity, 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.

Clinical Observations

Postoperative Sensitivity

Since its introduction, **RelyX Unicem** has had very few reported

TYPE OF RESTORATIONS CEMENTED WITH RELYX UNICEM

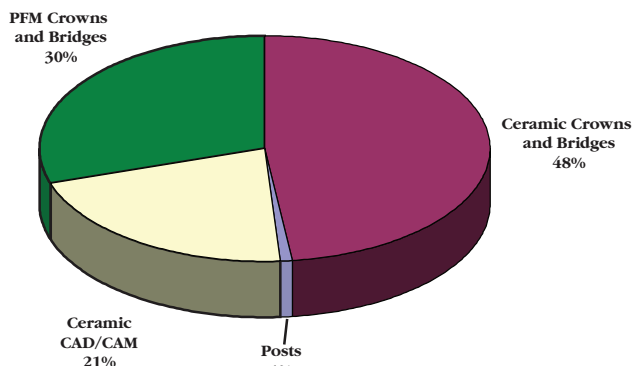


Figure 1

THE DENTAL ADVISOR



Consultants' Comments

- ◆ "Using **RelyX Unicem** I am confident in getting good retention."
- ◆ "We use **RelyX Unicem** more often than any other cement in the clinic."
- ◆ "I love the new post cementation tips used with **RelyX Unicem**."
- ◆ "In 7 years of using **RelyX Unicem**, it really has proven itself."

DISTRIBUTION OF RESTORATIONS BY YEAR

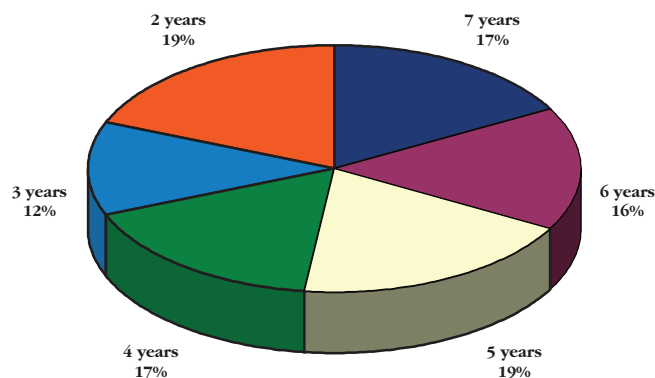


Figure 2

THE DENTAL ADVISOR

instances of postoperative sensitivity (Figure 3). The postoperative sensitivity was 1.1% of the seated restorations and usually occurred shortly after cementation. In most cases, the sensitivity subsided within weeks after cementing the restoration.

Marginal Discoloration

Ninety-four percent of the restorations recalled showed no marginal discoloration (Figure 3). Discoloration at the margin was exhibited by graying at the margin of ceramic restorations and, in rare cases, resulted in darkening of the entire restoration, making

continued on pg 7

SoftX™ Foam Bite Wing Loop + + + +

ConForm Monitoring Systems, Inc.
1-800-819-3336 Fax 303-699-3356
www.confirmonitoring.com

Description

SoftX Foam Bite Wing Loop attaches to traditional dental x-ray film for bitewing images. The soft foam cushion protects susceptible surfaces of the mouth during bitewing x-rays. A larger bite wing area allows the film to be placed far enough from teeth to avoid distortion caused by bent films. Each box contains 250 loops (size 0, size 2, or vertical) and instructions. **SoftX** was evaluated in over 1100 uses by 15 consultants. It received an 86% clinical rating.

Suggested Retail Cost

- \$24.95 /250 loops

Product Features

Patients appreciate the cushioned surface of **SoftX** and found it to be more comfortable than film with a cardboard tab. For the user, placement in the mouth is the same as traditional stick-on tabs. Film packets fit snugly in the **SoftX** loops, and nearly all consultants commented on improved patient comfort. Sixty percent of consultants felt that **SoftX** was better than their current bitewing tab. Forty-three percent of consultants would switch to



Consultants' Comments

- ◆ "Patients found them more comfortable."
- ◆ "Holds the film stationary; easy to line up with x-ray head."
- ◆ "I wouldn't use SoftX for every patient, but it is nice to have for those with tori or small mouths."
- ◆ "Can be difficult to insert film - very snug."

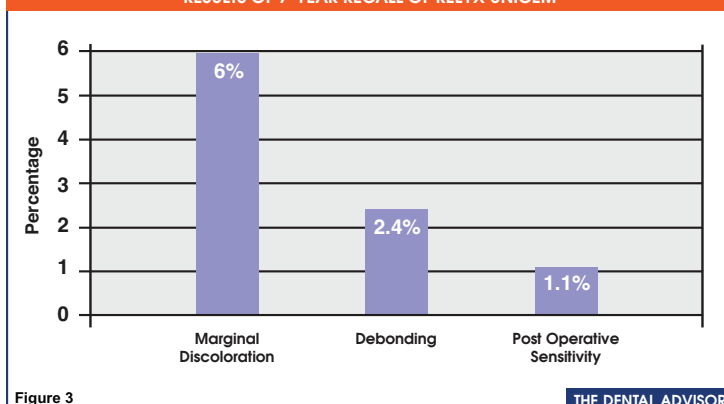
SoftX and 64% would recommend it.

Clinical Tips

- Place films in loops ahead of time.
- Wet film for easier placement. ■

3M ESPE RelyX Unicem Self-Adhesive Universal Resin Cement + + + + +

RESULTS OF 7-YEAR RECALL OF RELYX UNICEM



continued from pg 6

it very noticeable and unattractive. Graying at the margins was observed in 6% of the restorations. 1.3% of these restorations needed to be replaced because of the graying, while 4.7% were not replaced. The rate of microleakage of restorations cemented with **RelyX Unicem** is comparable to restorations cemented with

5th- and 6th-generation bonding agents and corresponding light- or dual-cured resin cements.

Debonding

A 2.4% debonding rate was documented in the recalled restorations over the seven-year evaluation period (Figure 3). Among the 1458 recalled restorations cemented with **RelyX Unicem**, 32 restorations needed to be recemented. Four of these restorations fractured or were lost and had to be redone. Upon examining the internal surfaces of the debonded restorations, it was observed in many of the cases that the cement had adhered to the restoration and not the tooth. Most of the teeth that supported these restorations exhibited various levels of graying or blackening of the surface.

Summary

RelyX Unicem has proven to be a reliable self-adhesive resin cement over the seven-year recall period. It is the only cement that has been documented by THE DENTAL ADVISOR over this length of time and continues to perform extremely well. ■

Quadrant Anterior Shine 2-year Clinical Performance

+++++

Cavex Holland B.V.
+31 (0)23 530 77 00
www.cavex.nl
www.practicon.com/cavex

Description

Quadrant Anterior Shine is a microhybrid, light-cured, radiopaque composite that is filled 63% by volume and 74% by weight. Class III, IV, and V restorations are indicated. Fifteen shades are available: A1, A2, A3, A3.5, A4, B2, B3, C2, C4, D3, OA2, OA3.5, Dark, Incisal, and Bleach. **Quadrant Anterior Shine** is available in 4 g syringes and 0.25 g unit-dose capsules. This product received a 96% rating.

Clinical Evaluation Protocol

312 **Quadrant Anterior Shine** restorations were placed in 142 patients. Class III, Class IV and Class V anterior restorations were placed (Figure 1). 172 restorations in 81 patients were available for evaluation of clinical performance up to 24 months after placement. Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Distribution of Quadrant Anterior Shine Restorations

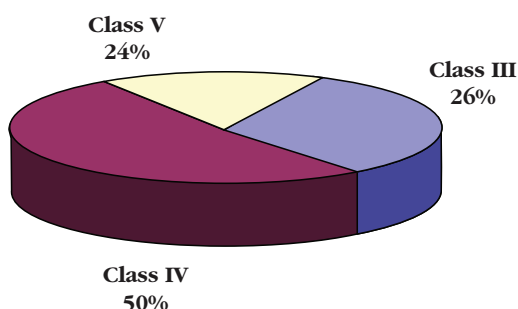


Figure 1

THE DENTAL ADVISOR

Clinical Observations

Fracture Resistance

Ninety-eight percent of **Quadrant Anterior Shine** restorations were intact after two years in service (Figure 2). Four restorations fractured or debonded during their first year of placement and were subsequently replaced.

Esthetics

As a highly esthetic composite, **Quadrant Anterior Shine** exhibited excellent blending with surrounding tooth structure. The specialty shade enhanced the range of Vita shades to provide



Consultants' Comments

- ◆ "After two years, my patients continue to be very pleased with the esthetics."
- ◆ "Quadrant Anterior Shine blends well with the surrounding enamel at placement and continues to be resistant to marginal discoloration."
- ◆ "The sculptability and chameleon effect continue to make this my material of choice in the anterior region."

an accurate shade match at placement. After two years, these restorations continue to exhibit excellent esthetics both in luster and shade stability (Figure 2).

Resistance to Marginal Discoloration

A variety of 5th- and 6th-generation bonding agents were used bond **Quadrant Anterior Shine** restorations. The majority of the restorations were resistant to staining after two years (Figure 2).

continued on pg 9

Quadrant Anterior Shine - Results of 2-year Recall

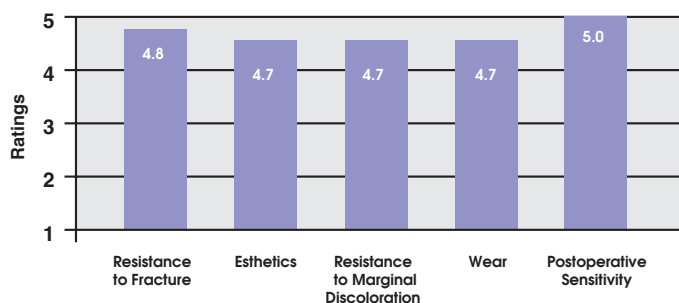


Figure 2

THE DENTAL ADVISOR

Amaris Gingiva + + + +

VOCO America, Inc.
888.658.2584
www.vocoamerica.com

Description

Amaris Gingiva is a set of pink, gingival shaded composites that are primarily used for Class V restoration of cervical caries, erosion, abrasion or exposed root surfaces associated with gingival recession, especially in the esthetic zone. The composite is radiopaque and can be used with all light-curing bonding agents. Three different light-cured **Amaris Gingiva Opaquers** have a flowable viscosity and are used to cover discolored cervical areas and to individually adapt the restoration to the surrounding gingiva. **Amaris Natural** is a single shade of translucent pink composite in a sculptable consistency. The kit includes three shades of *Opaquer* (white, light, dark) in non-running, 1.2 g NDT syringes and 1 syringe of **Amaris Natural**. **Amaris Gingiva** was used 193 times by 23 consultants. It received an 88% clinical rating.

Suggested Retail Cost

- \$229.00/ Kit

Product Features

Amaris Gingiva is easy to place and adapt to the teeth. To achieve natural looking results, consultants reported that they spent a greater amount of time selecting/mixing shades and contouring the material, compared to tooth-colored restorations. The opaquers were most often used to cover dark dentin and to modify shades. Often the Natural shade alone was sufficient. The material is easy to finish and quality of the final polish was highly rated. Consultants commented that additional shades of opaquer would allow easier shade matching. Thirty percent of consultants felt that **Amaris Gingiva** was better than their current Class V restorative material; whereas 48% felt it was the same. Seventeen percent of consultants would switch to **Amaris Gingiva** and 65% would



Consultants' Comments

- ◆ "I don't need it often, but when I do it is great!"
- ◆ "One more esthetic option."
- ◆ "Viscosity of the natural shade is very good - not sticky, and does not slump."
- ◆ "Natural shade alone worked well in many cases."
- ◆ "Great for matching cervical areas of abutment teeth next to removable prostheses."
- ◆ "Easy to dispense, build up and finish."
- ◆ "The shade after curing was not well received by patient."
- ◆ "It is really trial and error with the shades. Additional shades and enhanced instructions on mixing shades would be helpful."

recommend it.

Clinical Tips

- Mix the opaquers for the desired shade.
- Make custom shade tabs to help determine the best match.
- Shaping of material is important to overall effect.
- Do a cosmetic mockup to allow the patient to see proposed restoration. ■

Quadrant Anterior Shine 2-year Clinical Performance

+ + + + +

continued from pg 8

Wear Resistance

The majority of the restorations recalled after two years preserved their original luster (Figure 2). Only two Class III restorations on #8 and #9 exhibited slight dulling and were easily polished to their original luster.

Postoperative Sensitivity

No issues of tooth sensitivity were reported during the two-year

evaluation (Figure 2).

Summary

Quadrant Anterior Shine was used to place 312 anterior restorations in 142 patients. At two-year recall, the majority of 172 restorations recalled remained intact. All restorations exhibited excellent esthetics with very minor evidence of wear and marginal discoloration. No postoperative sensitivity was reported. ■

CEREC 3 with MC XL Mill 1-year Clinical Performance

Sirona
800-659-5977
www.sirona.com

Description

CEREC 3 is a CAD/CAM system for in-office designing and milling of ceramic restorations. The complete system consists of an integrated computer/monitor/ keyboard/camera, which is the hardware basis for the *3D software*. The chairside imaging unit communicates through either a wired or a wireless connection to the milling unit that can be placed anywhere in the office. The camera utilizes red light to capture images of powdered tooth surfaces. The powder is mandatory for proper imaging. On-screen prompts guide the user through the various steps of margin marking, virtual die trimming and restoration design. *Sirona's Biogeneric* software utilizes data from the patient's tooth, images of a bite registration, and a library of tooth anatomy to create a digital proposal of the desired restoration. Design tools allow customization of the restoration, and a multi-color display shows strength of occlusal and interproximal contact information. The **CEREC MC XL** mill accepts ceramic or composite blocks of various sizes; the computer determines the minimum size compatible with each restoration. Milling is accomplished by two diamond burs under constant water spray. The milling chamber is illuminated for viewing, and the menu displays current status of the milling process.

Clinical Evaluation Protocol

- **CEREC 3** was evaluated by Editors of THE DENTAL ADVISOR during a 12-month period.
- 161 restorations were designed and milled with the **CEREC 3** system.
- Type of restoration, ceramic material and cement were noted.
- 28 restorations were available for evaluation of clinical performance up to 12 months after placement.
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Clinical Observations at Placement

Obtaining good results starts with proper tooth preparation, meticulous attention to soft tissue retraction, uniform powdering and accurate imaging. As users gain experience and familiarity with the system, the process can be carried out more smoothly and required less time. The majority of restorations fabricated were partial-coverage restorations, including inlays, onlays and $\frac{3}{4}$ crowns (Figure 1).

Feldspathic ceramic (*CEREC Blocks by VITA*) was used for all of the early restorations. Later in the evaluation, *IPS Empress CAD* and *IPS e.Max CAD* (Ivoclar Vivadent) ceramics were used (Figure 2). The ceramics are available in high, medium and low

Consultants' Comments

- ♦ "I love being able to mark my own margins - I know right where they are."
- ♦ "The Optispray (Sirona) is the easiest way to powder the tooth."
- ♦ "I can't tell that a restoration is there."
- ♦ "Patients are impressed by the technology and enjoy having only a single visit."
- ♦ "Take the time necessary to get good images, and the rest is easy."
- ♦ "Lost some occlusal anatomy during adjustment."

Types of CEREC 3 Restorations

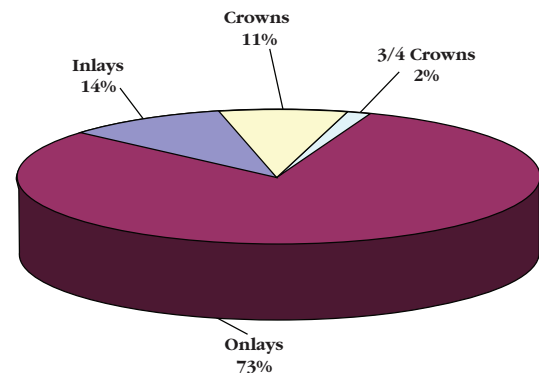


Figure 1

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Ceramic Blocks used with CEREC 3 System

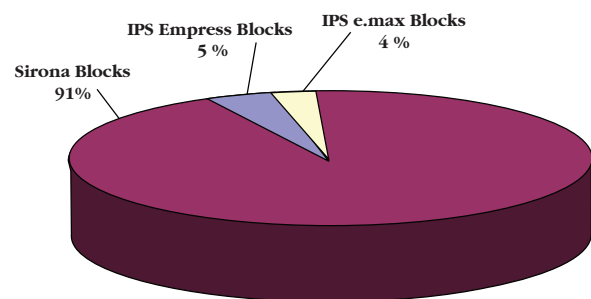


Figure 2

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translucency, as well as polychromatic blocks with a gradient of high to low translucency within the block. Generally, highly translucent blocks were selected for intracoronal restorations. The multi-colored blocks enhance the natural appearance of full and $\frac{3}{4}$ crowns.

The accuracy of the imaging was exhibited by the excellent fit of the milled restorations. Adjustment of proximal contacts or

CEREC 3 with MC XL Mill 1-year Clinical Performance

Cements used with CEREC 3 Restorations

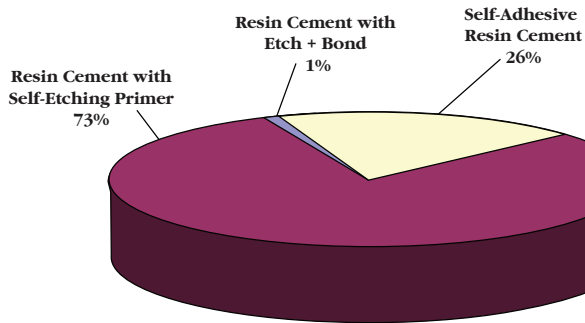


Figure 3

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occlusion is sometimes necessary; some restorations seat with no adjustment. The variability in need for adjustment is a result of many factors including the level of experience of the dentist or assistant doing the design, tooth preparation, parameter settings, and sprue location. All restorations were clinically acceptable and were bonded with a variety of resin cements (Figure 3).

Ceramic restorations milled with the **CEREC MC XL** were rated excellent for fit to the tooth. Proper tooth preparation, especially tapered walls and rounded corners, is the foundation for milled restorations that seat with no interference. Likewise, with good soft tissue retraction and accurate margin marking during the design phase, restoration margins in the mouth were observed to be excellent. The use of highly translucent ceramic and translucent cement enhances the esthetics of inlays and onlays, allowing visual blending of the restorative material with the tooth enamel. Anatomy is dependent upon the operator producing the design and is always limited by the milling burs, which do not have the ability to create deep occlusal grooves. After milling, the occlusal anatomy can be refined with a fine diamond bur in a high-speed handpiece and then polished.

CEREC 3 Restorations, Ratings at Placement

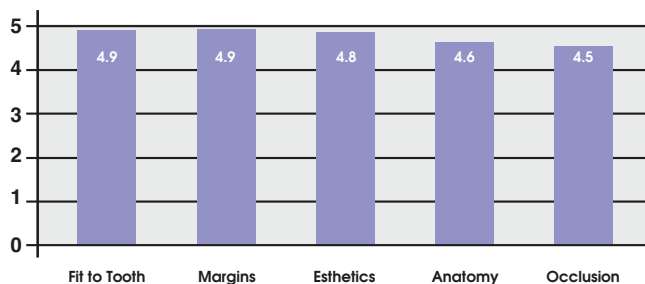


Figure 4

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Clinical Observations at Recall

Twenty-eight **CEREC 3** restorations were evaluated at up to 12 months after placement. No restorations failed (defined as debonding or fractures that required replacement). Three of the restorations (10%) had minor chips on the occlusal surfaces; none of these required repair. Most of the intracoronal restorations were finished with ceramic polishers, while most of the crowns were glazed and fired. The glazed ceramic maintained its gloss, and the polished ceramic was sufficiently glossy in most cases.

Summary

CEREC 3 was used to fabricate 161 restorations, 28 of which were evaluated at 6-12 months after placement. The system is an effective and efficient means of delivering an indirect restoration in a single patient visit. At one-year recall, the majority of **CEREC 3** restorations received excellent ratings. No visible signs of wear were noted and nearly all restorations were resistant to staining at the cavosurface margins. In most cases the ceramic exhibited excellent blending with the surrounding enamel. No post-operative sensitivity was reported.

Editor's Note: *The CEREC 3 is no longer available for purchase. The MC XL is available.* ■

CEREC 3 Restorations, Ratings at 1-year Recall

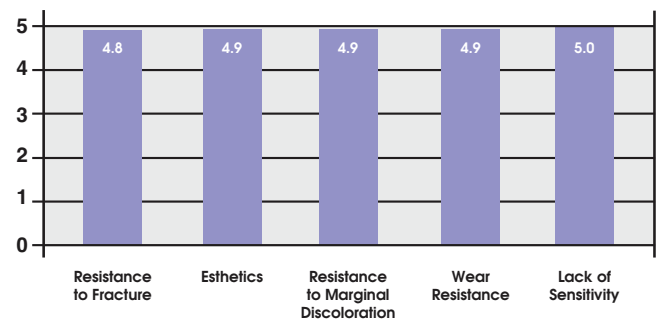


Figure 5

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Description

STATMATIC is a handpiece maintenance unit designed to accommodate a variety of handpieces and comes standard with 2 E-type and 1 Multiflex coupling. Other coupling options are available. The unit is a countertop model with a stainless steel finish. It will accommodate up to three handpieces and has a separate port for chuck cleaning. Cycle time is 15 seconds per handpiece for cleaning and lubrication. **STATMATIC** spray is automatically dispensed to clean with an expanding foam agent inside the handpiece and deliver the proper amount of lubrication. A disposable absorbent pad collects excess oil in the bottom of the unit. **STATMATIC** features an automatic safety valve on the spray can coupler that will only open when the unit has been activated. **STATMATIC** has a 10-year warranty. **STATMATIC** was evaluated by eight consultants in over 400 uses. It received a 96% clinical rating.

Suggested Retail Cost

- \$2700.00

Editors' Observations

Manufacturer's Instructions/Operator's Manual

Instructions thoroughly cover use and maintenance of the **STATMATIC** unit.

Ease of Initial Setup of Unit

The unit plugs into a standard electrical outlet and must be connected to a compressed air line. As long as these connections are in close proximity to the location of **STATMATIC**, setup is simple.

Ease of Loading/Unloading **STATMATIC** Spray

Cans of **STATMATIC** Spray are easy to load and unload.

Ease of Placing and Removing Handpieces

Placing and removing handpieces was rated as fair. When the unit door opens, the handpieces are oriented vertically, making it hard to see the holes and attach the handpiece. Consultants would prefer a configuration in which the attachments tilt out at an angle when the door opens.

Ease of Cleaning Chucks

Consultants appreciated the chuck cleaning feature, which is recommended to be done weekly, or more often if desired.



Consultants' Comments

- ◆ "Easy to operate, clean and keep looking new."
- ◆ "Quieter than other maintenance units. I like the disposable pads and lubrication feature."
- ◆ "Improve the ease of placing and removing the handpieces."

Ease of Operation

Operation is simple once handpieces are installed.

Ability to Clean Multiple Handpieces

The ability to clean up to three handpieces at a time was rated as fair. Consultants with busier practices would have preferred a fourth handpiece port along with the chuck port.

Absorption Pad

Consultants liked the disposable absorption pads. They were effective in collecting excess oil and kept the interior of the unit clean. Pads simply lay in the bottom of the unit and should be replaced when saturated.

Cycle Time

Cycle time is sufficiently quick at 15 seconds per handpiece.

Noise Level during Operation

Noise level during operation was rated as good. Most consultants commented on the quietness of the unit and some reported that **STATMATIC** was quieter than *Quattrocare (KaVo)*.

Time Savings (Compared to Manual Cleaning)

Time savings is one of the main benefits of using a maintenance unit for handpiece care. It is more efficient than manual cleaning and frees the dental staff to perform other tasks.

Appearance of Unit

The outer surface of **STATMATIC** is stainless steel, with a sleek, modern appearance. SciCan recommends a stainless steel polish to clean fingerprints off of the surface and provides a nice sheen.

continued on pg 13

BEYOND Max5 Treatment Kit + + + +

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Description

BEYOND Max5 Treatment Kit is an economy in-office whitening system packaged for use on five individual patients; also available as Max10, which treats ten patients. The whitening gel is formulated with a broad light activation spectrum for use with any bleaching light. **BEYOND Advanced Formula 35% H₂O₂ Whitening Gel** is supplied in a dual-barrel syringe with automix tip. **BEYOND Max5 Treatment Kit** includes a multi-lingual instruction manual and five each of the following items:

- 2.2-ml syringes of BEYOND Advanced Whitening Gel
- 1.6-ml syringes of BEYOND BlueSeal Gingival Protection
- Face protection cloths
- Patient consent forms
- Post-whitening care instruction cards
- VITA Bleachguide 3D-MASTER Paperguides.

BEYOND Max5 Treatment Kit was evaluated by seven consultants in 35 uses. This whitening system received an 87% clinical rating.

Suggested Retail Cost

- \$105.00/5-count patient kit
- \$200.00/10-count patient kit

Product Features

BEYOND Max5 Treatment Kit was rated highest for ease of application and removal from the teeth. The syringe dispensing hastens the procedure, and cleanup is minimal. The ability to use the product with any light makes it useable by all practices without an investment in new equipment. Consultants would like to have the gingival protection gel adhere better to the tissue and be a higher viscosity. Most consultants applied the whitening gel for 15 minutes at a time with up to three rounds per appointment.



Consultants' Comments

- ◆ "Procedure is simple and straightforward."
- ◆ "I had good results with my patients."
- ◆ "Teeth were often sensitive later in the day after whitening."
- ◆ "The barrier material is runny and kept coming loose."

Patients' Comments

- ◆ "Quick procedure with good results."
- ◆ "I liked having this done in one treatment and not having to wear a tray every night for days!"
- ◆ "My teeth weren't very sensitive after the treatment."
- ◆ "The odor was a little strong."

The volume of whitening gel was not adequate for every patient, depending on the number of teeth being treated. Sixty percent of consultants reported **BEYOND Max5 Treatment Kit** was equivalent to their current in-office tooth whitening system, whereas 20% reported it was better. Twenty percent of consultants would switch to **BEYOND Max5 Treatment Kit** and 20% would recommend it to their colleagues. Most of the patients reported that they did not experience discomfort during the whitening process. Of those patients that did experience some discomfort, on a scale of 1 to 5; 1 being severe and 5 being none, all patients rated the discomfort a 3 or a 4. Average whitening was four shades on the Vita guide with ninety-five percent of the patients reporting that their teeth were whiter. ■



STATMATIC + + + + +

continued from pg 12

Effectiveness of STATMATIC for Cleaning and Lubrication

Consultants were pleased with the quality of the lubrication, and the effectiveness of **STATMATIC** was rated as excellent. Handpieces ran well and did not expel excess oil.

Summary

Effectiveness of **STATMATIC** for cleaning and lubrication of handpieces and chucks was rated as excellent. Seventy-five percent of consultants reported that **STATMATIC** was better than their current handpiece maintenance unit. Seventy-five percent would switch and 100% would recommend it. ■

seT 18 - month Clinical Performance + + + + +

SDI (North America) Inc.
800.228.5166 - 630.238.8300
www.sdi.com.au

Description

seT is a fluoride-releasing, dual-cured, self-adhesive resin cement. It is indicated for the cementation of ceramic, metal or composite inlays, onlays, crowns, bridges and posts. **seT** is packaged in unit-dose capsules that are activated, triturated, and applied using a gun. Light-curing time is 20 seconds for translucent materials and 40 seconds for darker shades. After seating the restoration, a two-second tack cure is recommended at the margins to facilitate cement cleanup. **seT** is available in six shades: A1, A2, A3, OA3, Translucent, and White Opaque. The cement has an 18-month shelf life. This product received a 96% clinical rating.

Clinical Evaluation Protocol

- A total of 314 restorations were cemented over a 20-month period using **seT**. All of the restorations were all-ceramic restorations with the exception of one PFM crown (Figure 1).
- Of the 314 restorations, there were nine inlays/onlays, 47 anterior crowns and 258 posterior crowns (Figure 2).
- One hundred and ninety-eight restorations were recalled - 176 at 18 months and 22 at 12 months (Figure 3).
- Three variables were documented at the recall: marginal discoloration, sensitivity and retention. Each of the variables was rated on a scale of 1 to 5 (1=poor, 2=fair, 3=good, 4=very good, 5=excellent).

Results of Recall

Marginal Discoloration

Resistance to marginal discoloration was excellent with a 96% rating (Figure 4). Nine restorations (4.5%) received a rating of 4, exhibiting mild staining or graying at the margins. Even though the graying was somewhat noticeable, none of the patients requested replacement of the restoration. Note that 90% of the restorations were zirconia-based and made with a somewhat opaque coping.



Consultants' Comments

- ◆ "Nice cement – easy to clean after 2-3 second tack cure."
- ◆ "Capsule is a good dispensing system – easy to activate."
- ◆ "Variety of shades is an advantage in esthetic cases."

Sensitivity

Lack of sensitivity was excellent with a 96% rating (Figure 4). Only seven cases (3.5%) of postoperative sensitivity were reported by patients. This sensitivity was mild in nature and received a rating of 4. The sensitivity subsided over time and none of the teeth required root canal therapy.

Retention

Resistance to debonding was excellent with a 96% rating (Figure 4). Nine restorations (4.5%) debonded and required recementation. In one case, the patient was unaware of the loose crown; the patient bit on the crown and it fractured making it necessary to replace. The debonding rate is similar to debonding rates of other all-ceramic restorations monitored over 26 years by THE DENTAL ADVISOR.

Summary

seT is a user-friendly, reliable self-adhesive resin cement resulting
continued on pg 15

TYPE OF CERAMIC USED WITH SET

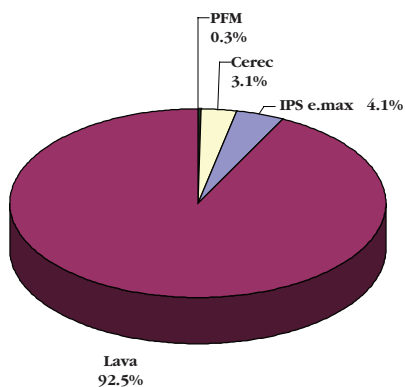


Figure 1

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TYPE OF RESTORATION

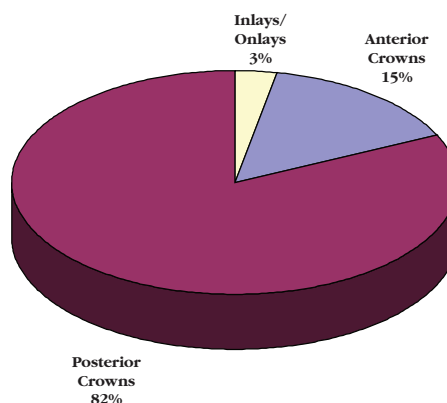


Figure 2

THE DENTAL ADVISOR

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www.scican.com

Description

BRAVO is a fractionated vacuum sterilizer that incorporates both pre-vac and post-vac cycles designed for optimum steam penetration and uses only fresh distilled water for every cycle. **BRAVO** runs self-diagnostics upon initiation and has four pre-sets for the most popular cycles. It is available in two capacities (17 and 21 liter); both units are available in two voltages (120v and 220v), single-button operation and a two-year warranty. Cycle times are in the range of 33 minutes for wrapped cycles to dry. Special features include single use "Pull'n Push" water system; double locking door mechanism; intelligent closed door drying with *Dri-Tec technology*; and optional internal printer or external data logger. Consultants evaluated both sizes of **BRAVO** sterilizer with three stainless steel wire instrument trays, stainless steel rack, one container with quick connect for adding distilled water, tubing, and an extra bacteriological filter. **BRAVO** was evaluated by 10 consultants over a 6-month period and it received a 92% clinical rating.

Suggested Retail Cost

- \$9250.00/21L Unit w/ printer
- \$7800.00/17L Unit

Product Features

BRAVO produced sterilized instrument pouches that were described as "bone dry." The unit received high ratings for ease of operation, readability of the display, and accessibility to controls.



Consultants' Comments

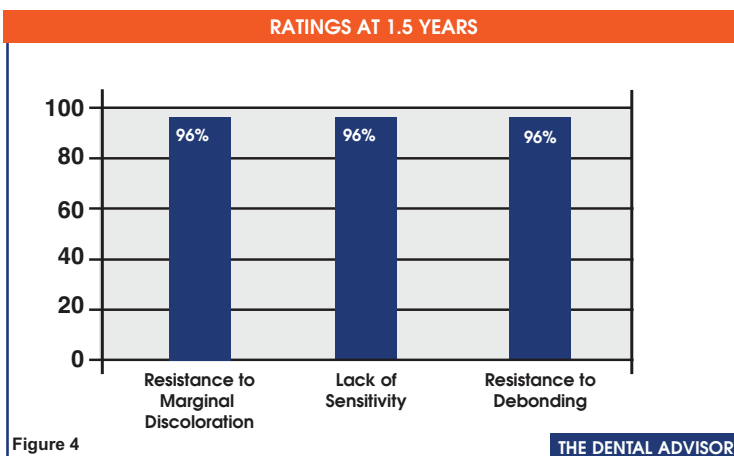
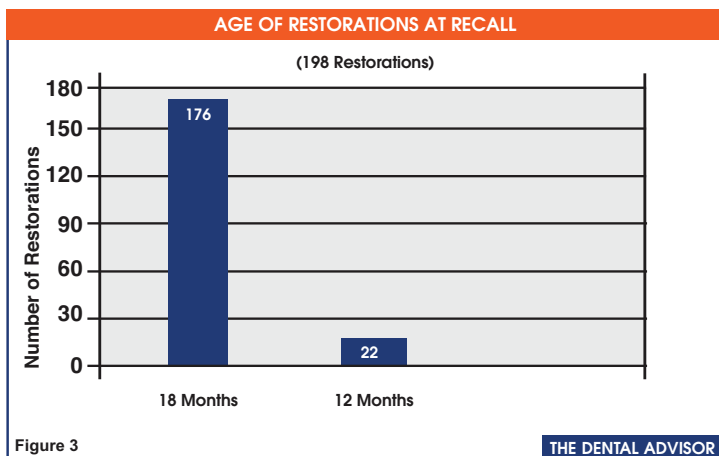
- ◆ "Dries instruments and pouches better than any other sterilizer."
- ◆ "Easy to use; easy to load/unload."
- ◆ "I like the auto fill and auto drain features."
- ◆ "Somewhat noisy."
- ◆ "Make chamber diameter larger."

One of the units evaluated was plumbed for an auto-fill/auto-drain feature which increased the convenience substantially. The smaller unit is appropriate for a small, low volume dental practice; all of the consultants preferred the larger unit. The ability to rotate the rack inside the chamber to accommodate cassettes (vertically) or pouches (horizontally) increases its versatility. Fifty percent of consultants rated **BRAVO** better than their current sterilizer. Fifty percent of consultants would switch to **BRAVO** and 70% would recommend it. ■

seT 18 - month Clinical Performance + + + + +

continued from pg 14
in minimal marginal staining, postoperative sensitivity and a

high retention rate, when used in the cementation of all-ceramic restorations. ■



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Description

Bifix SE system is a dual-cured, self-adhesive, universal resin cement. It is used for cementing indirect ceramic, composite, metal, posts, zirconia, and all CAD/CAM restorations. **Bifix SE** is radiopaque and has a working time of 2:15 minutes and a setting time of 3:30 minutes. The quick mix syringe automatically mixes the materials. **Bifix SE** is available in Universal (U), White-opaque (WO) and Transparent (T). Special features include tapered mixing tips, high adhesion to all substrates, low film thickness, soft gel phase for excess removal, no etching or bonding agents required, and no refrigeration required. Contents of the kit include three, 5-g syringes of **Bifix SE** (universal, transparent, opaque), 15 pointed mixing tips, 15 flat mixing tips with 15 angled intraoral endo tips, manufacturer's instructions, and MSDS. Twenty-one consultants evaluated this cement in 338 uses. **Bifix SE** received a 94% clinical rating.

Suggested Retail Cost

- \$159.00 /Kit with 3 syringes

Product Features

Bifix SE is a simple cement to use and has versatility for use with all restorative materials. Working time is adequate and the dual-cured capability allows controlled setting time. Consultants liked the narrow intraoral tips that attach to the mixing tips. The translucent shade blends well with enamel and was the shade of choice with ceramic inlays, onlays and translucent ceramic crowns. After seating the restoration and a brief tack cure with the light, excess cement peels off cleanly from the margins. Forty-three



Consultants' Comments

- ◆ "Intraoral tips make it easy for cementation of posts and small indirect restorations such as inlays and onlays."
- ◆ "Easy to use and easy to clean up excess."
- ◆ "Nice viscosity, homogenous mix."
- ◆ "Convenient storage since no refrigeration is required."
- ◆ "Translucent shade great for inlays/onlays."
- ◆ "Provide more shades for cosmetic cases."

percent of consultants reported that **Bifix SE** was better than their current self-adhesive resin cement, whereas 57% reported it was the same. Forty-eight percent of consultants would switch to **Bifix SE** and 71% would recommend it.

Clinical Tips

- Apply a thin layer of cement inside the crown and seat the crown quickly.
- Make sure excess is removed at gel stage. ■

SPECIAL THANKS TO:

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