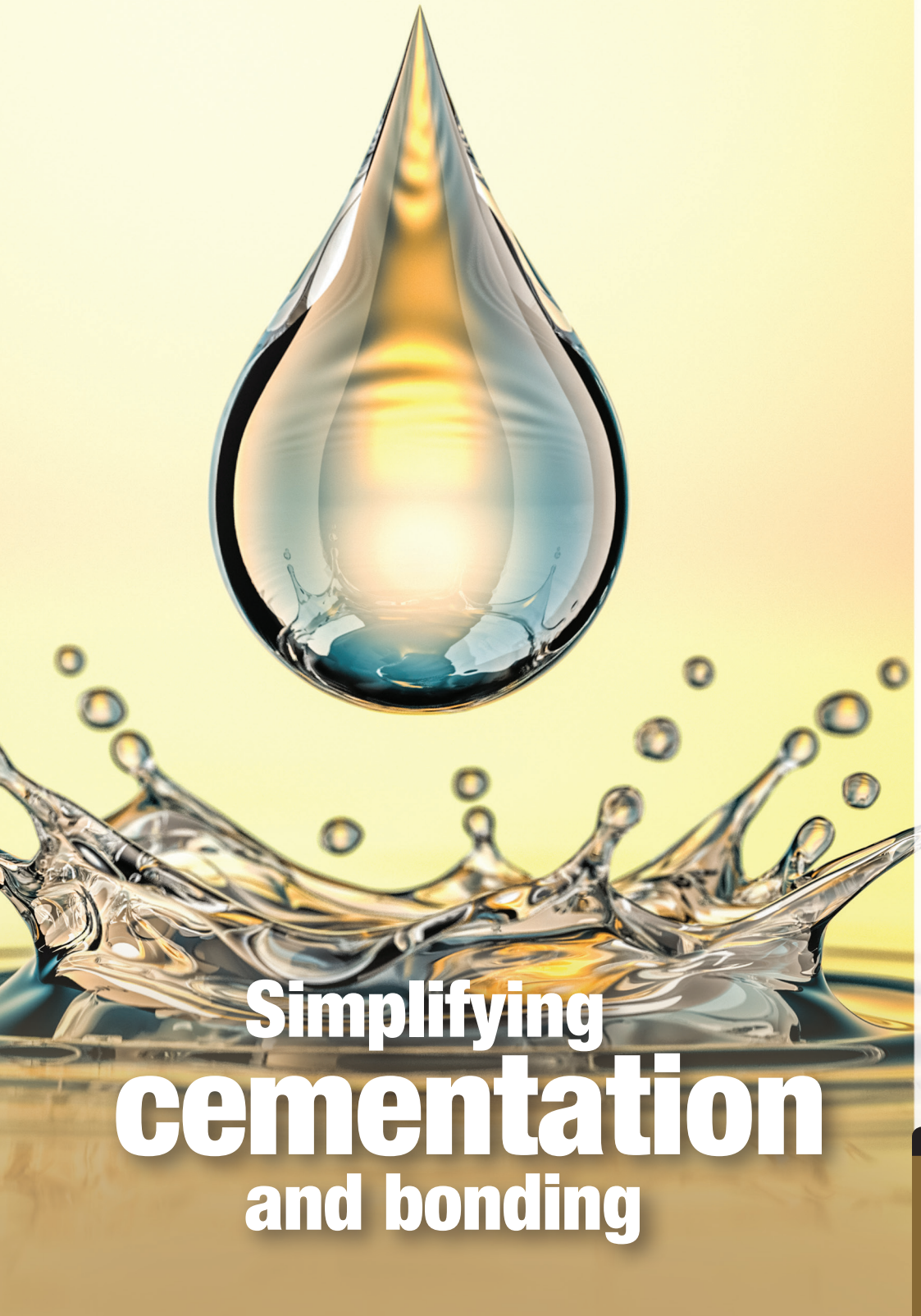
THE DENTAL ADVISOR™
Improving Patient Care Through Research & Education

May-June 2017
Vol. 34, No. 3



Simplifying cementation and bonding

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RATINGS:
Excellent + + + + +
Very Good + + + +
Good + + +

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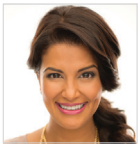
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As new ceramics are introduced, the cementation process continues to adapt and evolve. There are a number of new resin cements on the market, some of which combine existing materials for convenience and simplified procedures, and some that have entirely new chemistry; however, we have yet to see a true universal cement for all indications.

Do we really need a universal cement? This is a frequent question asked at my lectures. My answer is always the same - do you have one type of glue in your home? Personally, I don't. I have a variety of glues that are chosen depending on the materials I am adhering to. When working with paper, I use white craft glue. Although it takes longer to set, it is easy to use and clean up. When I need a strong bond for projects involving metal, ceramics or wood, I opt for super glue. While it is technique sensitive, it forms a very strong bond quickly and dries clear. You can see where I am going with this. There are a number of new materials on the market, and each type of cement has different physical and mechanical properties, making no one cement alone sufficient for every application. To achieve success, clinicians need to be aware of the characteristics of each type of cement and use them appropriately.

The focus of this issue is to provide you with a brief overview of the properties, classifications, and advantages of various resin and conventional cements as well as describe what makes universal bonding agents "unique." As always, I welcome your comments and suggestions; you can reach me at drbunek@dentaladvisor.com.

Cement Choices

All permanent cements can classified into one of two broad categories:

Traditional cements: (zinc phosphate, zinc polycarboxylate, glass ionomer, and resin-modified glass ionomer) are essentially "gap fillers" relying on micromechanical retention provided by the luting agent. Resin- modified glass ionomers (RMGI) are most commonly used in this category because they offer slightly better strength and adhesion, easy cleanup, and lower solubility.

Resin cements: (self adhesive, adhesive resin and esthetic resin) have gained popularity mainly because they address the shortcomings of luting cements; they exhibit high bond strength to tooth structure, higher esthetics, and the lowest solubility of the available cements. They rely on both micromechanical retention and chemical bonding.

Selecting the Best Cement

There are many types of cement to choose from and often there is more than one viable option. An easy place to start in the decision-making process is by looking at the strength of the ceramic, as well as taking into account the retentiveness of the preparation.

Generally, when esthetics is of high concern, low- to medium-strength glass ceramics (feldspathic, leucite- reinforced, lithium disilicate) are selected. A benefit of using high-strength cements (adhesive- or esthetic resin) is that they will add strength to the entire restoration. When using a high-strength ceramic (zirconia) with a retentive preparation, a low-strength cement such as a self-adhesive resin cement or RMGI can be used because it is not necessary to rely on the cement for additional strength. Guidelines for cement selection based upon the strength of the ceramic and the retentiveness of preparation are highlighted in the table below.

Ceramic Strength	Preparation	Resin-Modified Glass Ionomer	Self-Adhesive Resin	Adhesive Resin	Esthetic Resin (DC & LC)
LOW (feldspathic, leucite-reinforced)	Retentive			✓	✓
	Non-retentive			✓	✓
MEDIUM (lithium disilicate)	Retentive		✓	✓	✓
	Non-retentive			✓	✓
HIGH (zirconia)	Retentive	✓	✓	✓	✓
	Non-retentive			✓	✓

Simplifying Cementation: Self-adhesive Resin Cements

Resin Cements

Resin cements exhibit high bond strength to tooth structure, excellent esthetics, and the lowest solubility of the available cements. Currently, resin cements can be classified into three categories:

1. **Self-adhesive Resin Cements:** No separate etching or priming of teeth or restorations
2. **Adhesive Resin Cements:** Bonding to teeth based on self-etch primer, primer not required for restorative substrate
3. **Esthetic Resin Cements:** Bonding to teeth based on total-etch adhesive, restorative substrate requires primer

1 Self-adhesive Resin Cements

Self-adhesive resin cements are easy to use and provide low to medium bond strengths (4-16 MPa) to tooth structure. They do not require the use of a bonding agent on the tooth; however, some bonding agents recommended by manufacturers can be compatible with self-adhesive resin cements. Self-adhesive resin cements have a lower incidence of sensitivity than adhesive or traditional crown and bridge cements.

Advantages

- Easy to use *(no etch or primer required)*
- Less technique sensitivity
- Low postoperative sensitivity
- Easy cleanup
- Dual-cured

Disadvantages

- Can have a shade shift over-time
- Isolation from moisture/contaminants required

Self-adhesive

Product	Rating
RelyX Unicem 2 Automix Self Adhesive Resin Cement (3M)	96%
G-CEM LinkAce (GC America)	93%
Panavia SA Cement Plus (Kuraray)	98%
Bifix SE (VOCO)	94%

G-CEM Link ACE™

GC America



Chosen as a preferred product for 2 consecutive years, ***G-CEM LinkAce™*** is a dual-cure, self-adhesive resin cement. It is indicated for cementation of all-ceramic, resin and metal-based crowns and bridges, inlays, onlays and posts. Offering the highest polymerization in self-cure mode, ***G-CEM LinkAce*** provides reliable results, regardless of the type of prosthetic material that is being cemented. The cement contains proprietary phosphate monomers which ensures bonding to zirconia, as well as CAD-CAM and metal-free restorations. Working time is 3:30. Tack curing of margins is recommended, followed by removal of excess cement. Final self-curing occurs in 4 minutes, or the product may be light cured for 20 seconds per surface. ***G-CEM LinkAce*** was reported by consultants to be easiest to remove after a short tack cure.

Panavia SA Cement Plus

Kuraray Noritake Dental



Awarded the Top Self Adhesive Resin Cement in 2017, ***PANAVIA SA Cement Plus*** is a dual-cured, fluoride-releasing, self-adhesive resin cement which tolerates both moist and dry surfaces during bonding. With a working time of 1 minute; a tack-cure of 2 to 5 seconds; and a 10-second final cure, cementation is efficient with easy clean-up. It is indicated for placement of crowns, bridges, inlays, onlays, posts and cores, implant restorations, and adhesive bridges and splints. In testing in THE DENTAL ADVISOR'S materials lab, it demonstrated excellent bond strength of >50 MPa to zirconia and lithium disilicate, and 26 MPa to unetched dentin. When evaluated, 100% of clinicians stated they would use this cement. ***PANAVIA SA Cement Plus*** received a 98% rating and 'Editor's Choice' from THE DENTAL ADVISOR.

- "Very easy to use, a go-to material."
- "After spot curing, the excess peels right away from the margins."

NEW DEVELOPMENTS: Look for these evaluations in a future issue of THE DENTAL ADVISOR

TheraCem™

Bisco Dental Products



BISCO's next generation resin cement combines the benefits of bonding with the simplicity of a traditional cementing protocol. ***TheraCem*** is a dual-cured, calcium and fluoride-releasing, self-adhesive resin cement indicated for luting crowns, bridges, inlays, onlays, and all types of posts. ***TheraCem*** offers a high degree of conversion and transitions from acidic to alkaline ph in minutes. Delivering a strong bond to zirconia and most substrates without the need to prime or etch, along with easy clean up and high radiopacity, ***TheraCem*** offers clinicians reliable and durable cementation of indirect restorations.

Maxcem Elite™ Chroma

Kerr Restoratives



Maxcem Elite Chroma is the first Self-Etch/Self-Adhesive resin cement offering a Color Cleanup Indicator, making it the smartest cement available on the market today. The pink color fades at the gel state, telling you the optimal time to cleanup excess cement. Forming a strong and durable bond with a wide variety of dental substrates, it is compatible with all indirect restorations - anterior or posterior ceramics, PFMs, metal restorations, and CAD/CAM materials. ***Maxcem Elite Chroma*** offers you best in class adhesion when compared to other leading self-adhesive cements. In addition to the color cleanup indicator – ***Maxcem Elite Chroma*** also offers One-Peel™ cleanup, automix delivery system, and easy no refrigeration storage.

2 Adhesive Resin Cements

Adhesive resin cements provide medium-high bond strengths and are an excellent choice when retention is of concern with all restorative materials. They differ from self-adhesive resin cements because they require the use of a separate bonding agent on the tooth. One trend we are seeing from manufacturers is the bundling of their adhesive resin cements and universal bonding agents into pre-packaged kits. With universal bonding agents included in kit, the clinician has the option for total-, self-, or selective-etching of the tooth. Indications for adhesive resin cements include all-ceramic crowns/bridges and inlays/onlays, high-strength ceramic (zirconia) crowns/bridges, Maryland bridges, and posts (metal and fiber).

Advantages

- Can use in with all restorative materials
- Can be used when retention is of concern
- Common shades: universal, translucent, and opaque
- Dual-cured

Disadvantages

- Can have a shade shift over time
- Clean up can be difficult
- Isolation from moisture/contaminants required

Adhesive Resin

Product	Rating
RelyX Ultimate Adhesive Resin Cement (3M)	96%
Duo-Link Universal (Bisco Dental Products)	93%
eCEMENT (Bisco Dental Products)	93%
Multilink Automix (Ivoclar Vivadent)	97%
G-CEM LinkForce (GC America)	97%
PANAVIA V5 (Kuraray Noritake Dental)	92%

3M™ RelyX™ Ultimate Adhesive Resin Cement *3M*



When you need extra-strength bonding without the hassle of complex adhesive systems, choose ***3M™ RelyX™ Ultimate Adhesive Resin Cement*** in combination with ***3M™ Scotchbond™ Universal Adhesive.*** You'll get versatile, reliable adhesive cementation that's fast and easy to use - all with just two components.

- Proven, industry-leading bond strength
- Fast and easy procedure with only two components
- Total-etch, selective etch or self-etch procedures
- First-class esthetics with natural fluorescence

Duo-Link Universal™ *Bisco Dental Products*



DUO-LINK UNIVERSAL™ is perfect for reliable, high strength cementation with easy clean-up. Its extremely high, consistent degree of conversion in both self-cured and light-cured modes, is required by today's stronger restorations. In addition, ***DUO-LINK UNIVERSAL*** has low film thickness to assist in effective seating and offers diagnostic radiopacity for that perfect margin. BISCO's ***DUO-LINK UNIVERSAL*** Kit is an adhesive cementation system designed to effectively address the cementation of all your indirect restorations for optimal performance and esthetics in an easy-to-use kit.

G-CEM LinkForce™ *GC America*



G-CEM LinkForce is a dual-cured, radiopaque, universal adhesive resin cement system. The three main components in the kit are the ***G-Multi PRIMER, G-Premio BOND*** and the ***G-CEM LinkForce*** universal cement. The MDP and MDTP-based ***G-Multi PRIMER*** improves bond strength and is applied to the intaglio surface after the restoration has been prepared with hydrofluoric acid (for glass and hybrid ceramics) or sandblasted (all restoratives except glass ceramics), then dried. ***G-Premio BOND*** (also MDTP-based) is applied to the tooth surface after self-etching, selective etching or total etching. Light-curing of the bonding agent takes 10 seconds. If self-curing is required, ***G-Premio BOND*** is mixed with an equal quantity of ***G-Premio BOND DCA,*** applied and then air-dried for 5 seconds after waiting 20 seconds. ***G-CEM LinkForce*** adhesive cement, after mixing, has a working time of 3 minutes at normal room temperature. Tack-curing takes 1 to 2 seconds for easy clean-up prior to final cure. Light-curing the cement takes 20 seconds for each surface or margin. Alternatively, the cement can be left to self-cure for 4 minutes.

PANAVIA V5 *Kuraray Noritake Dental*



PANAVIA V5, the latest version of PANAVIA series from Kuraray America, is a dual-cured, fluoride-releasing, color-stable, universal adhesive resin cement. It is available as an all-in-one kit. The self-etching Tooth Primer contains the original MDP adhesive monomer; its new chemistry accelerates cement curing and provides for high bond strength to all tooth structure in the self-cure mode. The ***CLEARFIL CERAMIC PRIMER PLUS*** also contains MDP and a y-MPS silane monomer that enhances bond strength to restorative materials. In THE DENTAL ADVISOR'S bio-materials lab, ***PANAVIA V5*** demonstrated excellent bond strength at 44 MPa to dentin. Tack-curing can be achieved in 3 to 5 seconds using a blue LED light and final cure in 10 seconds. ***PANAVIA V5*** received a 92% overall rating from THE DENTAL ADVISOR.

- "A 'must-have' for any dental office."
- "This cement can be used in multiple situations. In my office, less (products) is more."

Simplfying Cementation: Esthetic Resin

3 Esthetic Resin Cements

Esthetic resin cements generally contain an option for dual-cured or light-cured only polymerization. However, a few esthetic resin cement kits include light-cured only cements suitable for thin, all-ceramic restorations such as veneers and inlays/onlays. Light-cured cements are preferred due to their color stability and increased working time. Light-cured resin cements do not contain an amine catalyst (found in many dual-cured resin cements), so there is less chance of shade shift over time that can result from oxidation of the amine catalyst. These cements typically require etching the tooth with phosphoric acid, followed by priming of the restoration and application of resin cement. Most manufacturers provide a variety of shades and corresponding try-in pastes, which makes them ideal for esthetic restorations.

Advantages

- Highly esthetic
- Light-cured or dual-cured
- Longer working time with LC cement
- Color stable
- Highest bond strength to enamel and dentin with appropriate bonding agent
- Available in a variety of shades with corresponding try-in pastes

Disadvantages

- Most technique sensitive
- Isolation from moisture/ contaminants required

Product	Rating
RelyX Veneer Cement (3M)	98%
Variolink Esthetic (Ivoclar Vivadent)	98%
NX3 Nexus Third Generation (Kerr Restoratives)	97%
Mojo Veneer Cement (Pentron)	96%

Variolink® Esthetic

Ivoclar Vivadent



Variolink® Esthetic is an adhesive luting composite that offers clinicians incredibly easy clean-up, natural fluoresence and radiopacity. ***Variolink Esthetic*** is the successor to ***Variolink® II*** & ***Variolink® Veneer*** and is available in both a light-cure (LC) and dual-cure (DC) versions. Each version is available in five shades; Light+, Light, Neutral, Warm, and Warm+ for simplified shade matching. ***Variolink Esthetic*** contains the patented light initiator, ***Ivocerin,®*** which is 100% amine-free for enhanced shade stability. ***Variolink Esthetic*** is indicated for the adhesive luting of glass-ceramic, lithium-disilicate, and composite restorations.(0.16 mL each).

NX 3 Nexus® Third Generation

Kerr Restoratives



Universally indicated for all indirect applications, ***NX3 Nexus® Third Generation*** is a permanent adhesive dental cement system with an innovative chemistry for unmatched esthetics, adhesion and great versatility. Delivery system choices include an automix syringe for dual-cure indications and a light-cure cement for multiple units where unlimited work time is needed. The automixing dual-cure cement can be used for all indirect applications, including veneers. With Kerr's proprietary amine-free initiator system and optimized resin matrix, ***NX3*** is the first truly color-stable adhesive resin cement.

Clinical performance of resin cements over time

RelyX™ UniCem 2 (3M)

15-YEAR CLINICAL PERFORMANCE



6,003 Restorations placed

3,401 Reviewed at recall

This product received a

96% clinical performance rating

at the 15-year recall.

RelyX Unicem Self-Adhesive Resin Cement is dual-cured and does not require separate etching, priming or bonding. ***RelyX Unicem 2*** is available in a paste/paste formulation delivered via a Clicker or an automix syringe. Both formulations are indicated for the cementation of composite crowns, bridges, inlays and onlays; PFM and metal restorations, implant abutments and endodontic posts.

RelyX Unicem Self-Adhesive Resin Cement has proven to be very reliable over the 15-year recall period. Retention 108 (4.8%) of the recalled restorations debonded over the 15-year evaluation period. 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.

A DETAILED REPORT CAN BE FOUND AT:

https://www.dentaladvisor.com/evaluations/3mrelyx-unicem-self-adhesive-resin-cement-15-yr

SpeedCEM® Plus (Ivoclar Vivadent)

2-YEAR CLINICAL PERFORMANCE



136 Restorations placed

122 Reviewed at recall

This product received a

98% clinical performance rating

at the 2-year recall.

SpeedCEM Plus is a self-adhesive resin cement with a light-curing option. This cement offers an ideal combination of performance and ease of use. Its formulation has been optimized for use in conjunction with zirconia and metal-ceramics, and for the cementation of high-strength ceramics on implant abutments. Strong self-curing capabilities offer an additional measure of reliability when seating opaque restorations.

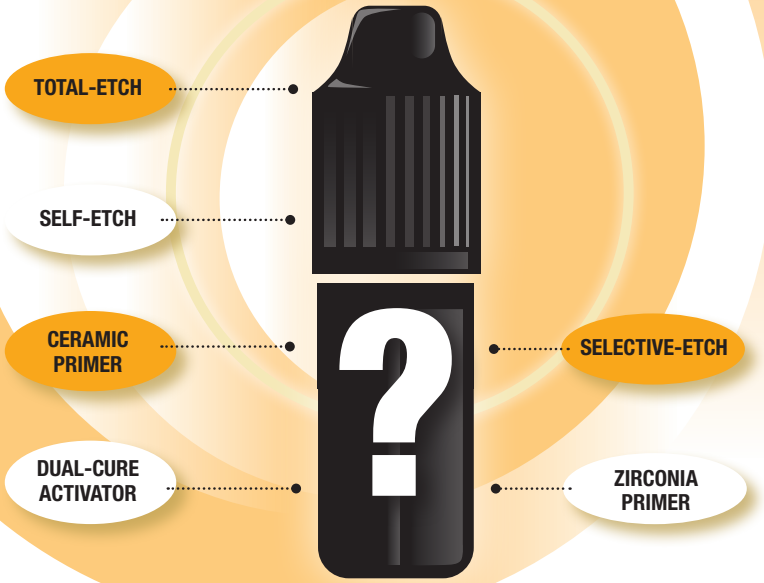
SpeedCEM Plus has proven to be an excellent, self-adhesive resin cement. After two years in service, there was almost no clinical evidence of marginal discoloration, sensitivity or debonds observed. The ultimate success of a restoration is strongly dependent on the retention.

A DETAILED REPORT CAN BE FOUND AT:

www.dentaladvisor.com/evaluations/speedcem-plus-2-yr

Universal Bonding Agents

For the past two decades, total-etch bonding agents were categorized as 4th- and 5th-generation products, and self-etch bonding agents were categorized as 6th- and 7th-generation products. The new universal bonding agents have essentially replaced these total-etch and self-etch generations of bonding agents.



What is a Universal Bonding Agent?

New "universal" adhesives have gained popularity because they are designed to simplify the steps involved with direct and indirect bonding protocols. The idea that one adhesive system can be used with different etching techniques, can bond to the different substrates, and can dual-cure, all without the use of separate activators or primers, is very appealing to clinicians. However, not all universal bonding agents can make that claim.

While the term universal implies the product can be used in all situations, ***it is important to understand that manufacturers do not define "universal" the same way;*** it does, however, generally relates to two or more of the following:

1. ***Compatible with*** different etching techniques: total-, self-, and selective-etch mode.
2. ***Compatible with*** dual- and self-cured materials without the use of a separate activator.
3. ***Can be used as a*** primer for silica-based and metallic restorations.

WHAT'S NEW: CLEARFIL Universal Bond Quick

CLEARFIL Universal Bond Quick (Kuraray Noritake Dental), is a fluoride-releasing, single-bottle, universal adhesive containing innovative MDP and Amide chemistry that provides RAPID BOND TECHNOLOGY. This ground-breaking amide monomer rapidly permeates dentin and enamel, minimizing the risk of contamination and eliminating waiting time. The new Amide chemistry also results in less fluid absorption.

In THE DENTAL ADVISOR'S materials lab, ***CLEARFIL Universal Bond Quick*** demonstrated excellent bond strength to both enamel and dentin. When independently tested in THE DENTAL ADVISOR materials laboratory, Enamel Shear Bond Strength was 43 MPa and 28 MPa respectively, using both a total-etch and self-etch technique. Dentin Shear Bond Strength was 40 MPa and 41 MPa, respectively. ***CLEARFIL Universal Bond Quick*** Standard is available in both bottle and unit dose delivery.



iBond® Universal

KULZER



Awarded as a 2016 Clinical Problem Solver, ***iBOND Universal*** is an 8th-generation universal bonding agent compatible with self-etch, total-etch or selective etch techniques. ***iBOND Universal*** enables bonding of composite materials, precious metals, non-precious metals, zirconia and silicate ceramic and is compatible with light-cure, dual-cure and self-cure materials without the need for a dual-cure activator. ***iBOND Universal*** offers easy and precise application and the ability to intraorally restore fractures and chips as an effective, economical and efficient alternative to replacement. Restorations with zirconia, precious and non-precious alloys and composites can be repaired intraorally. The ***iBOND Universal*** bottle has a new drop-control dispenser that allows clinicians to apply just as much or as little bonding agent as needed. The notched bottle design prevents unwanted waste and mess, allowing for an efficient and controlled application, with up to 220 drops per bottle. Having one adhesive for use with all restorative materials simplifies the armamentarium and contributes to clinical success.

3M ScotchBond™ Universal Adhesive

3M



3M™ Scotchbond™ Universal Adhesive is a single-bottle adhesive that provides uncompromising performance and bond strength whether used for direct or indirect restorations. Its simple application process helps the adhesive perform reliably, regardless of user technique. The product is moisture-tolerant, exhibiting high bond performance on moist and dry substrates. With ***3M Scotchbond Universal Adhesive,*** dentists have an easy-to-use, single-bottle solution that provides uncompromising results for all surfaces in total- or self-etch mode. It assures dentists of virtually no post-operative sensitivity—in both the total- and self-etch technique, and provides exceptional bond strength to dentin and enamel. For more information on ***3M Scotchbond Universal Adhesive,*** visit 3M.com/Scotchbond.

Simplfying Cementation: Universal Bonding Agents

FuturaBond U
VOCO



Chosen as an Editor's Choice, 5-plus-rated product by THE DENTAL ADVISOR, ***Futurabond U*** is a universal bonding agent that can be used for all etching techniques as well as for all curing techniques with self-, light- and dual-curing direct and indirect resin materials. No additional activators or primers are required. ***Futurabond U*** is reinforced with silicon dioxide nanoparticles that reinforce the hybrid layer to provide a durable, high bond strength. It is applied and rubbed in a single layer for 20 seconds, followed by 5 seconds of air drying and curing for 10 seconds. ***Futurabond U*** is delivered in unit-dose packaging for convenient, contamination free application and does not require refrigeration. The single dose delivery system prohibits the evaporation of the solvent as experienced in bottle systems.

G-Premio Bond™
GC America, Inc.



G-Premio BOND™ is a universal, 8th generation bonding agent that is compatible with total-, self-, and selective-etch techniques, providing excellent versatility. ***G-Premio BOND*** offers good stability with an extended working time of up to five minutes. It provides better strength in a one-bottle system than most other two-bottle bonding systems. A new silicone bottle cover enables more precise drop dispensing; it is available in a 5mL kit or refill, and a 50 unit dose pack (0.16 mL each). ***G-Premio BOND*** is also offered in syringe and unitip introductory kits with ***G-ænial***™ ***Sculpt,*** GC's universal compactable composite.

The table below lists Universal Bonding Agents clinically evaluated by THE DENTAL ADVISOR.
As with any new dental material, be sure to thoroughly read the manufacturer instructions prior to use.

Product	Manufacturer	Indicated for all etching modes *(Total-, Self-, and Selective-etch)*	Separate dual-cure activator required *(with dual-cure materials)*	Primes Silica- and Zirconia- based ceramic and metal restorations	Clinical Rating
Adhese Universal	Ivoclar Vivadent	Yes	No	Monobond Plus recommended	**93%**
ALL-BOND UNIVERSAL	Bisco Dental Products	Yes	No	Yes*	**96%**
G-Premio BOND	GC America	Yes	Yes	No	**96%**
iBOND Universal	Kulzer	Yes	No	Yes**	**98%**
CLEARFIL Universal Bond Quick	Kuraray Noritake Dental	Yes	Yes	Yes	**CE****
Scotchbond Universal	3M	Yes	Yes***	Yes	**98%**
OptiBond Universal	Kerr Restoratives	Yes	Yes***	Yes	**CE****
Futurabond U	VOCO	Yes	No	Yes	**96%**

* Separate primer not required if bonding agent is light-cured
** Use of ceramic primer is recommended for silica-based ceramics
*** Dual-Cured Activator is not required if adhesive is paired with resin cement from same manufacturer
**** Currently being evaluated

Adhese® Universal
Ivoclar Vivadent



Adhese® Universal is a light cured adhesive for direct and indirect procedures. It has consistently high bond strength and virtually no post-operative sensitivity with any etching technique: self-etch, selective etch or total-etch. The revolutionary ***VivaPen®*** delivery form delivers up to 190 single-tooth applications, three times more applications per ml than the traditional bottle delivery form. This drastically decreases cost per application and contributes to more cost-effective treatments.

ALL-BOND UNIVERSAL®
Bisco Dental Products



ALL-BOND UNIVERSAL® combines etching, priming and bonding in a single bottle. ***ALL-BOND UNIVERSAL*** is now available in unit-dose packaging. The convenient, easy to handle, orange colored unit-dose offers efficiency and ease-of-use. Unlike other one bottle adhesives, ***ALL-BOND UNIVERSAL*** can be used with both direct and indirect restorations, bonds to all indirect substrates, and is compatible to all composite and resin based cements without an additional activator. The versatility of ***ALL-BOND UNIVERSAL*** makes it an indispensable part of any dental practice.

Simplfying Cementation: Ionomer Cements

Glass Ionomers

Since their introduction in the 1970s, numerous modifications have been made to glass ionomers making them suitable for an array of modern-day clinical applications, including use as a luting agent. Glass ionomers are derived from an acid-base reaction between a basic glass powder (calcium fluoroaluminosilicate) and an acidic water-soluble polymer. During this hardening reaction, significant amounts of fluoride ions are released. Unlike resin cements, glass ionomer cements are hydrophilic and include water in their formulation, resulting in a moisture tolerant material that directly adheres to tooth structure by a chemical bond. Additionally, because glass ionomers set by an acid-base reaction, minimal shrinkage occurs.

They are classified as either conventional glass ionomer or resin-modified glass ionomer, which have resin added to the formula to improve physical properties. Both cements chemically bond to enamel and dentin, release fluoride, have a coefficient of thermal expansion similar to that of tooth structure, exhibit hydrophilic properties, and are available in powder-liquid, paste-paste, and encapsulated formulas.

Resin-modified Glass Ionomer Cement

Resin-modified glass ionomers (RMGI) **were developed in the 1980s to overcome the high solubility of conventional glass ionomers.** The addition of resin to the glass ionomer formulation provides slightly greater bond strengths, releases a similar amount of fluoride, and allows for the material to harden when light cured. Although they offer lower strength than resin cements, their adhesion is adequate for metal, metal-ceramic and high-strength ceramic restorations (zirconia) as well as for metal and composite fiber posts. RMGI cements are a great option in cases where moisture control is an issue or when you need fluoride release.

GC FujiCEM 2

GC America



A 5-year Top Award winner as Top Resin Modified Glass Ionomer Cement, ***GC FujiCEM 2*** is indicated for permanent cementation of all types of metal-, resin-, alumina- and zirconia-based inlays, onlays, crowns, bridges, and endodontic posts. Working time is 2 min 15 seconds, and intraoral setting time is 4 min 30 seconds. Laboratory testing by THE DENTAL ADVISOR found a significantly stronger bond of ***GC FujiCEM 2*** to dentin compared to ***GC FujiCEM.*** This cement has a creamy consistency and spreads to a low film thickness that allows complete seating of restorations with little pressure. Cleaning excess cement at about a minute and a half is easily accomplished at soft set. After the full setting time, cement at the margins peels off cleanly with an explorer.

3M™ RelyX™ Luting Plus Resin Modified Glass Ionomer Cement

3M



Convenient, versatile and easy-to-use ***3M™ RelyX™ Luting Plus Resin Modified Glass Ionomer Cement*** eliminates hand-mixing while offering better bond strength than convention glass ionomer luting cements. Suitable for a wide range of everyday applications, including PFMs, metal and pediatric crowns and restorations on implants.

- 5-second tack light cure feature for "clean-up on demand"
- Sustained fluoride release for pediatric and geriatric patients
- A good choice for pediatric restorations
- Higher bond strength than conventional glass ionomer
- Virtually no post-op sensitivity

Clinical Tips for GI & RMGI Cements

- **The bond to tooth structure is significantly reduced when the tooth is excessively dried,** which also contributes to post-cementation thermal sensitivity. Lightly moisten dentin using a micro-applicator or a damp cotton pellet so it is slightly glossy with no water pooling on the surface.
- **Do not place a bonding agent before placing a glass ionomer** because it decreases fluoride uptake.
- **Light cure resin-modified glass ionomers from the buccal and lingual aspects** to allow cleaning of excess cement in the gel phase.
- **Because both glass ionomer and resin-modified glass ionomer products are water-based,** clinicians should be aware of the expiration dates of the products.
- **Glass ionomer and resin-modified glass ionomer cements tend to be more opaque than resin cements.** Do not use with all-ceramic restorations in the anterior region where esthetics is of concern.



Riva Luting Plus

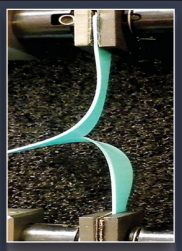
SDI North America



Riva Luting Plus is a resin modified, self curing, glass ionomer luting cement, designed for final cementation of metal, PFM and resin crowns, bridges, inlays and onlays plus ceramic inlays and crowns. ***Riva Luting Plus*** chemically bonds to dentin, enamel and all types of core material. ***Riva Luting Plus*** has excellent adhesion to dentine and zirconia. It is great for luting ceramic crowns and inlays. ***Riva Luting Plus's*** free movement of fluoride allows the formation of fluorapatite, which is more acid resistant than hydroxyapatite creating an optimal environment for tooth remineralization.

THE DENTAL ADVISOR
Improving Patient Care Through Research & Education

Research Report
Matt Cowen, B.S., J.M. Powers, Ph.D.
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Number 99 – November 4, 2016

Bond Strength Comparison of CLEARFIL Universal Bond Quick

M. Cowen, J.M. Powers



Purpose:

The purpose of this project was to compare the shear bond strength to ground dentin and enamel of a new bonding agent requiring a shorter application time with two other popular bonding agents.

Experimental Design:

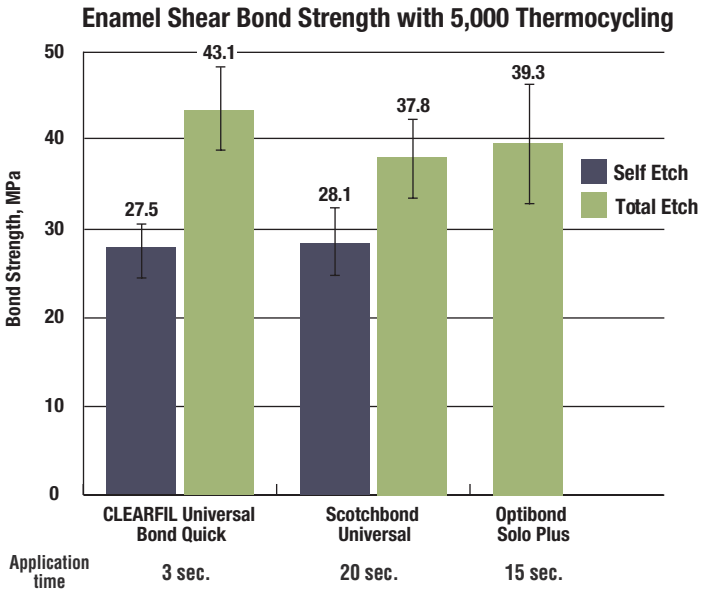
Materials and Conditions:

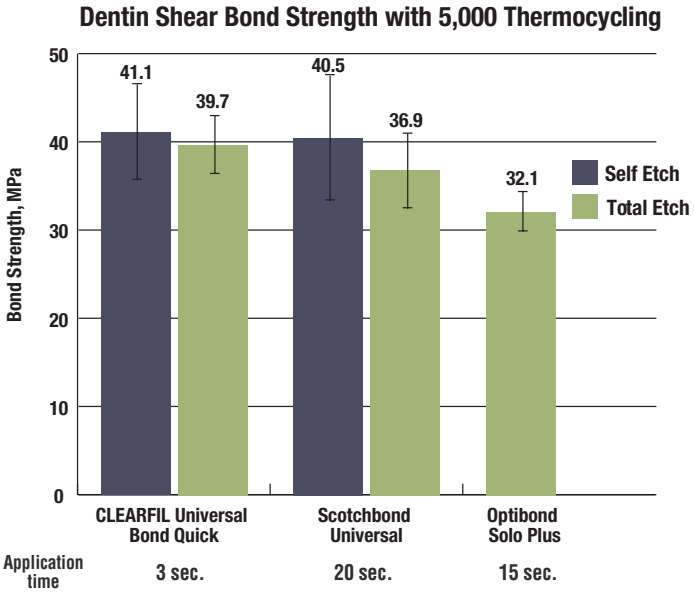
Product	Company	Lot	Etching Time	Application Time	Air Drying Time	Light Curing Time
CLEARFIL™ Universal Bond Quick	Kuraray Noritake Dental	T160128	10 s	3 s	5 s	10 s
K-ETCHANT Syringe, 35% Phosphoric Acid		1M0003				
OptiBond™ Solo Plus	Kerr Restoratives	5738933	15 s	15 s	3 s	10 s
Kerr Gel Etchant, 37.5 % Phosphoric Acid		5702171				
Scotchbond™ Universal	3M	618804	15 s	20 s	5 s	10 s
Scotchbond™ Universal Etchant 32 % Phosphoric Acid		621073				

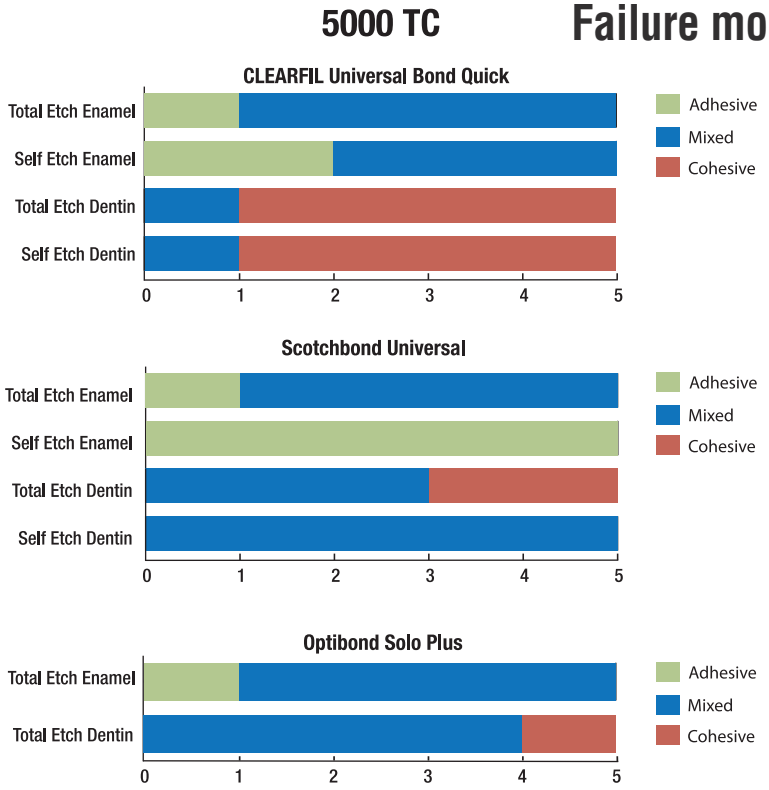
Composite: ***TPH Spectra™ HV*** (DENTSPLY Sirona Restoratives)
Light Curing Unit: ***Demi*** (Kerr Restoratives), >1300 mW/cm²
Substrates: Ground adult human enamel and superficial dentin
Test: Ultradent Shear Bond Strength test (n = 5), 2.38 mm diameter cylinder
Storage Conditions: 24 h in 37 °C followed by 5000 thermal cycles, 5-55 °C in water
Etching Mode: ***CLEARFIL Universal Bond Quick*** (Kuraray Noritake Dental): Total-etch and Self-etch
OptiBond Solo Plus (Kerr Restoratives): Total-etch
Scotchbond Universal (3M): Total-etch and Self-etch

Methods:

Human third molars extracted within 3 months of testing, previously stored in sodium azide solution, then in saline and then in water, were embedded in resin and abraded on the facial surface through 600-grit (Carbimet, Buehler, ~15 µm) SiC paper to form a bonding substrate of ground superficial dentin and ground enamel. Each specimen was then ultrasonically cleaned in deionized water for 5 minutes. Each specimen was prepared with the selected etching mode and bonding agent according to manufacturer's instructions, followed by direct placement of the composite material utilizing the Teflon Ultradent shear test mold and set-up jig. The specimens were stored for 24 h in 37 °C water and thermocycled between 5 and 55 °C water with a 20 second dwell time for 5000 cycles. The test specimens were debonded in shear on a universal testing machine (Model 5866 Instron) at a crosshead speed of 1.0 mm/min. Failure mode was determined with a 40x stereomicroscope by classification into categories of adhesive, mixed or cohesive failure. Adhesive failure occurs when greater than 95% of the substrate surface is clear of adhesive, cohesive failure in which there is no debonding and the failure was due to fracturing of the resin or substrate, and mixed failure in which both failure modes are apparent. Shear bond strength means and standard deviations and failure mode are reported.







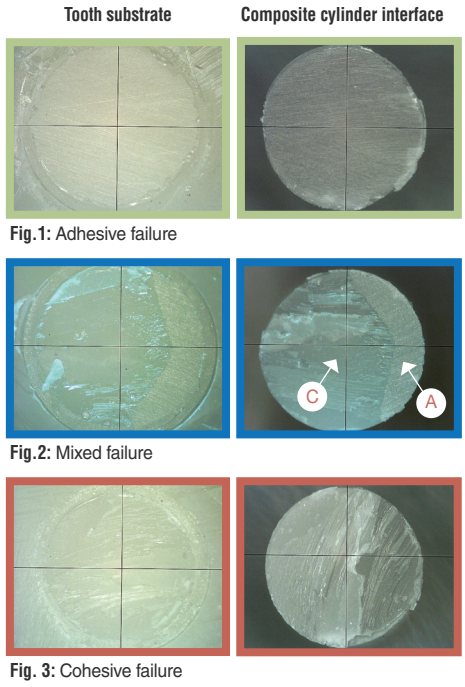


Fig.1: Adhesive failure

Fig.2: Mixed failure

Fig. 3: Cohesive failure

Adhesive failure (green above) indicates the failure occurred due to the bond strength of the bonding agent to the tooth. A cohesive failure (red above) on the other hand, indicates the bond strength was greater than the strength of materials used. A mixed failure (blue above) generally indicates the strength of the bonding agent and supporting materials were close enough to each other to exhibit both failure modes. Cohesive failure generally means the value reported for the bond strength is greater than measured due to early failure of the materials. The large number of cohesive failures in the dentin group for ***Clearfil Universal Bond Quick*** indicates the bond strength to dentin is even higher than reported.

Conclusion:

CLEARFIL Universal Bond Quick with a reduced application time of 3 seconds showed equivalent, or superior shear bond strengths compared to ***Scotchbond Universal*** and ***OptiBond Solo Plus*** after 5000 thermocycles.

Ketac Universal

+ + + + ½

91% overall rating

3M
www.3m.com/dental



Description

Ketac Universal Aplicap is a self-curing, self-adhering, radiopaque glass ionomer restorative material. It can be placed in bulk, does not require incremental layering, and offers a low level of stickiness sufficient for it to stick to the preparation without sticking to the instrument. It also offers continuous fluoride release for 24 months. Setting time is 3 minutes, 40 seconds from the start of mixing. With a compressive strength of 250 MPa, this restorative material can be used in restricted stress-bearing areas. ***Ketac Universal Aplicap*** is available in six shades, including White, A1, A2, A3, A3.5, and A4. Boxes contain 50 capsules of a single shade, or a mix of White, A2 and A3.

Unique Features

- Low stickiness for easy placement
- Does not require a conditioner or coating after placement
- Extended indications for use compared to other glass ionomer materials

Consultants' Comments

- *"Easy to dispense, apply and sculpt."*
- *"It was fast setting and did not slump."*
- *"Easy to pack, especially under crown margins where there is recurrent decay."*
- *"It is convenient to have a fast set option when working on children."*
- *"The simple workflow improves efficiency."*
- *"I like the fluoride release. Great for geriatric patients."*
- *"I would like a less opaque shade as well, and a greater range of shades."*
- *"The volume in the capsule is low."*

Clinical Tips

- Make sure you are ready to dispense and apply it as soon as it is mixed - it sets really quickly.
- Leave the tooth moist.
- Wait until near the end of the setting time to do any molding.
- Use a slightly wet instrument to initially adapt the material to the margins.
- Use a wet cotton tip applicator or pellet to adapt and smooth out the surface.
- Use for seniors with dry mouth and/or poor home care.
- It makes a great protective layer for lost tooth structure placed when prepping for a crown. Trim carefully if using in a core, to avoid gouging the set material.

Indications

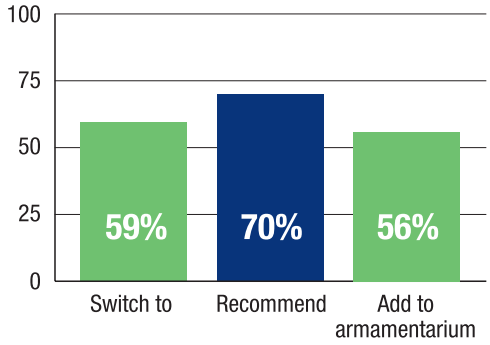
- Restorations in primary teeth
- Class V restorations
- Core build-ups
- Liner
- Fissure sealing
- Restricted stress-bearing Class I and II restorations
- Single- and multi-surface temporary restorations

Evaluation Highlights

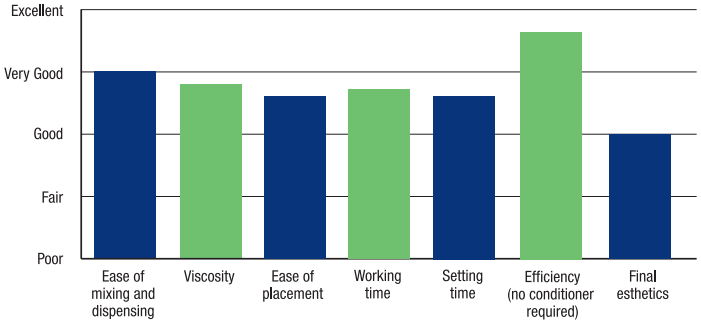
Ketac Universal Aplicap was evaluated by 27 consultants for a total of 463 times.

- Bulk-fill, self-cured.
- Self-adhering.
- Radiopaque.
- Fast setting time.
- Fluoride releasing.
- One-step, no conditioner or coating required.

Percentage of Consultants Who Would:



Key Features:



Clinpro™ 5000 Anti-Cavity Toothpaste

+ + + + +

96% overall rating



3M
www.3m.com/dental

Description

Clinpro™ 5000 Anti-Cavity Toothpaste is a prescription-strength, 5000 ppm fluoride toothpaste. In addition to 1.1% sodium fluoride, it contains functionalized tri-calcium phosphate and offers low abrasivity. It is used once per day in place of the patient's usual toothpaste for caries prevention and has been shown to remineralize subsurface carious lesions. No additional step is required in the oral hygiene regimen. ***Clinpro 5000*** toothpaste is available in a 4-oz tube in vanilla mint, spearmint and bubble gum flavors.

Indications

- Caries prevention.

Consultants' Comments

- *"Clinpro 5000 is smooth and creamy."*
- *"Only a small amount is needed for it to be effective."*
- *"It foamed less than non-prescription strength toothpaste."*
- *"My teeth and mouth feel really clean after using it."*
- *"My sensitivity was reduced to almost nothing after a few days of use. I'll continue to use this."*
- *"The vanilla mint flavor is refreshing."*
- *"I love this paste."*
- *"There seemed to be an aftertaste."*
- *"I would like to see a version in a pump."*

Clinical Tips

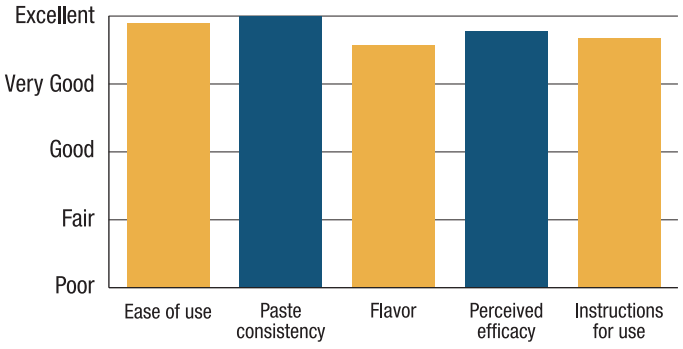
- Don't overload the brush with the paste, a little goes a long way.
- I used this for caries prevention and to treat hypersensitivity, it is effective for both.

Evaluation Highlights

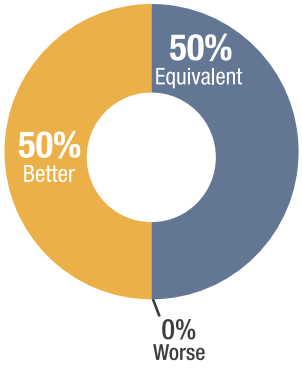
Clinpro 5000 toothpaste was evaluated by 12 consultants.

- Easy to use.
- Easy to dispense.
- Excellent paste consistency.
- Good flavors.
- Creamy texture.

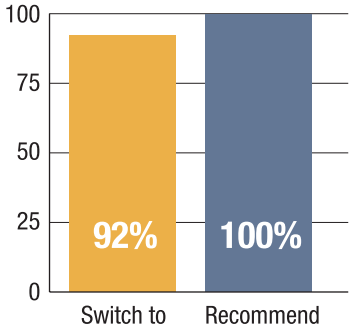
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Antivet

++++

Antivet
www.antivet.com

86% overall rating

Description

Antivet is a one-visit treatment for the removal of brown stains caused by fluorosis and extrinsic stains caused by tobacco smoking. A dental dam is first applied to isolate the teeth, after which the tooth is treated by applying the low-pH enamel cleaning solution to the tooth surface with a brush or cotton pellet, and gently rubbing the solution on the tooth until the stain is removed. The low-pH solution helps to separate the fluoride ions out of the fluorotic area. Following treatment with the enamel cleaning solution, a neutralizing solution is applied for 2 minutes. ***Antivet*** is supplied with a 10 ml bottle of enamel cleaning solution and a 10 ml bottle of neutralizing solution, rubber dams, brush applicators, a palette for the solutions, and the manufacturer's instructions for use.

Indications

- Treatment of pigmented fluorotic stains.
- Removal of extrinsic stains associated with tobacco smoking.

Unique Features

- Permanent stain removal.
- Results in one visit, with no sensitivity.

Consultants' Comments

- *"Easy to use, and we saw results right away. It worked very well."*
- *"Truly one-visit stain removal."*
- *"It worked quickly. My patient was thrilled with the results."*
- *"Works great for brown stains and it's a conservative treatment."*
- *"Patients experienced no sensitivity or discomfort."*
- *"Nice that the dental dam is included in the package."*
- *"I like the fact that it doesn't require micro abrasion first."*
- *"Super product! Exceeded my expectations."*

Clinical Tips

- I used it to prepare a tooth bleaching, providing a surface that could more easily be whitened.
- Select cases with stains that ***Antivet*** is intended to treat. It does not work for all types of stains.
- Use a rubber dam to protect soft tissues, and rinse the area thoroughly after treating the stain.
- Monitor progress while you are removing the stain.

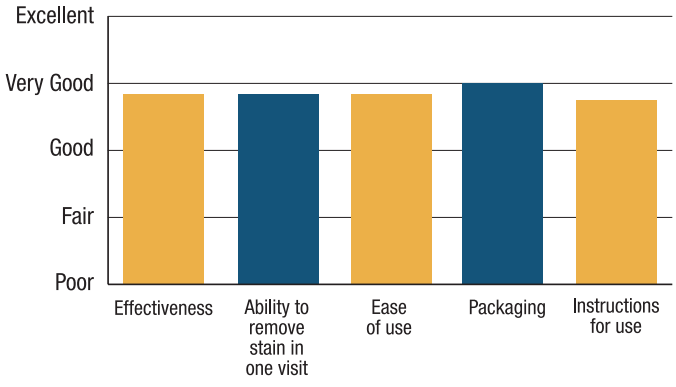


Evaluation Highlights

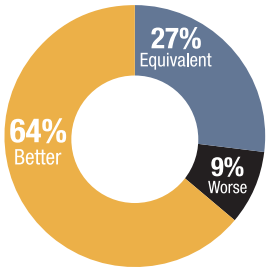
Antivet was evaluated by 22 consultants.

- Easy to use.
- Effective.
- Good patient acceptance.
- No sensitivity.
- Fast and efficient.
- Requires use of a rubber dam.

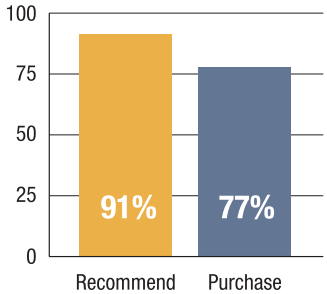
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



SISU NextGen Sports Mouth Guards

+ + + + ½

91% overall rating

Akervall Technologies, Inc.
www.sisuguard.com



Description

SISU NextGen Sports Mouth Guards are custom fit, remoldable mouth guards constructed of durable, non-compressible thermo-polymer. They incorporate Diffusix technology that results in the material having high tensile strength, lessens the transfer and adsorption of impact, and helps to minimize material deformation on impact. Crumple zones in the sports guard absorb impact.

SISU NextGen Sports Mouth Guards can be custom fit in minutes at home or in the office. They are ultra-thin, and users can speak normally and drink while wearing one. ***SISU NextGen Sports Mouth Guards*** are available in multiple colors.

Options that include:

- Junior Guard 1.6 mm thick for children ages 7 to 11 years old
- Aero Guard 1.6 mm thick for all sports
- Max Guard 2.4 mm thick for high impact sports

Consultants' Comments

- *"Great material with interesting properties - unobtrusive, thin and lightweight."*
- *"Quick and easy to fit after you get over the learning curve. A slightly pre-formed arch would help."*
- *"Excellent instructions. The material seems strong enough to be durable and somewhat protective."*
- *"Great for orthodontic patients, young athletes and gaggers."*
- *•People like the thinness, air holes, and ability to speak and drink with it in - good compliance."*
- *"A great product for patients who need/want the economy of self-molded appliances."*
- *"We have been using this product for 5 years and love it."*

Clinical Tips

- Use block-out material around ortho appliances.
- We used a hot water pot to keep water hot to soften the material and get the best molding.
- During fabrication, instruct patient to press and move the tongue from side-to-side on the upper palate. Be sure the patient pushes the lingual flange down with his/her tongue and that it fits lingually.
- Having the patient practice a repeatable centric in the office before molding helps a great deal.

Patients' Comments

- *"Easy to wear, thin and comfortable. Feels great. It's easy to breathe with it in."*
- *"Good fit, it stayed securely in place, I could talk normally and drink with it in."*
- *"It was simple, easy to mold, and easy to do by myself."*
- *"I like the holes, colors and that it's remoldable."*
- *"I am a female soccer keeper at the collegiate level and have always worn a mouth guard. After trying your product I fell in love with it."*
- *"I'd definitely suggest your product to my other teammates."*

Indication

- For use while playing contact and non-contact sports that are associated with risk for oral injuries.

Unique Features

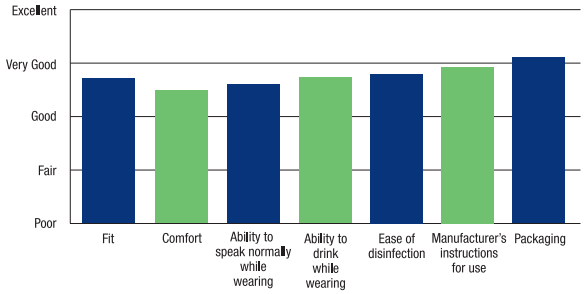
- Can be remolded up to 20 times.
- Diffusix technology lessens the effects of impact.
- Can remain in place while drinking which reduces handling, making the sports guard more hygienic.
- Does not contain latex, phthalate, PVC or BPA.
- Works with braces.

Evaluation Highlights

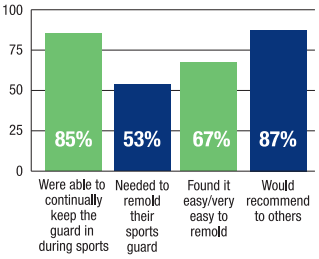
SISU NextGen Sports Mouth Guards were evaluated by 33 consultants, in total > 280 times.

- Custom-fit, rigid mouth guard.
- Thin and lightweight.
- Does not interfere with patient speaking and drinking.
- Available in pediatric and adolescent/adult versions.

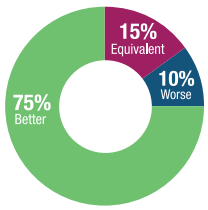
Key Features: Patient Evaluation



Percentage of Patients Who:



Compared to Other Products Used: Patient Evaluation



UNO Gel

++++

86% overall rating



Germiphene Corporation
www.germiphene.com

Description

UNO Gel is a topical desensitizing gel that contains "BioSchell," which binds to dentin and enamel, attracts calcium and phosphate, and occludes dentinal tubules; the gel also contains 10% xylitol. ***UNO Gel*** is clear, odorless, tasteless, and non-irritating to gingival tissue. It is quick and easy to dispense and apply. When used in-office, a thin uniform layer should be applied and left in place for 2-4 minutes, after which patients should not rinse, eat or drink for 10 minutes. For at-home use, the gel may be applied twice-daily with a clean finger, after brushing, and the patient should not rinse or eat/drink anything for at least 10 minutes after application. ***UNO Gel*** is delivered in a pump dispensing system, and supplied in a 30mL bottle for home use.

Indications

- In-office management of hypersensitivity, including before and after dental procedures.
- At-home treatment of dentinal hypersensitivity.

Unique Features

UNO Gel is fluoride-, paraben-, gluten- and lactose-free. It is made with tooth friendly ingredients, which help strengthen enamel and prevent build-up of plaque. "BioSchell" contains bioactive polymers. It has a unique dispensing system.

Evaluation Highlights

UNO Gel was evaluated by 30 consultants, with an average of 17 uses per consultant.

- Easy dispensing.
- Creamy, smooth viscosity.
- Easy application in-office and at home.
- Can be applied in several ways.
- Tasteless and odorless.
- Reduces sensitivity in office.
- Good instructions for use.
- At-home twice-daily application builds up and then maintains the reduction in sensitivity.

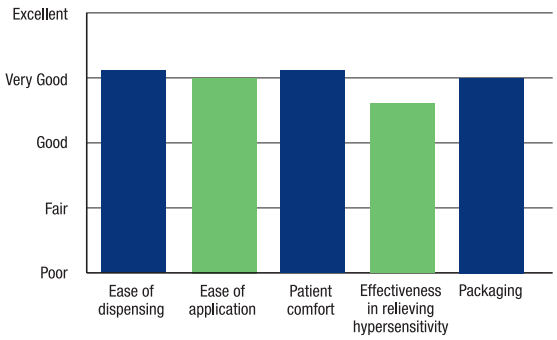
Consultants' Comments

- *"This is a brilliant dispensing system, the gel is fantastic and stays where you put it."*
- *"Easy to dispense the amount you need."*
- *"I liked using finger application best. It's also easy to apply using a Q-tip or a microbrush."*
- *"More 'natural' than other products."*
- *"I would like to use it to treat chronic sensitivity, not as a one-time treatment for acute sensitivity."*
- *"Patients were comfortable when we used the gel."*
- *"I liked everything about the product, it worked very well in our office."*
- *"I would like to see the gel available in unit doses for home use."*
- *"I would like to know more about the ingredients and the benefits of the calcium."*

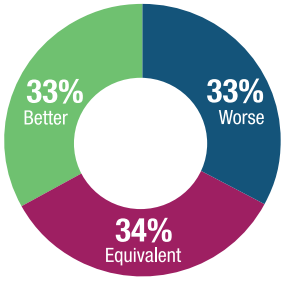
Clinical Tips

- Use a tiny brush or cotton tip applicator for application.
- Isolate the area well, so that the material is not diluted.
- We place it in the short side of the Dappen dish and apply it with a white microbrush.
- Let patients know that the relief from sensitivity will increase with repeated at-home applications.

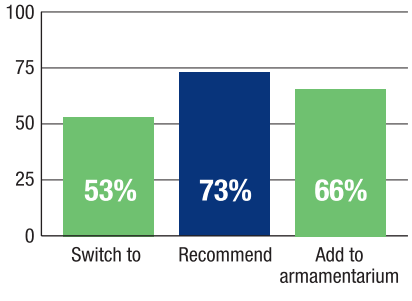
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Obsidian

(3-YEAR CLINICAL PERFORMANCE)

+ + + + +

Glidewell Dental Laboratories
www.glidewelldental.com

98% rating at recall

Purpose:

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

Clinical Evaluation Protocol:

A total of 226 ***Obsidian*** restorations were placed over a 12-month period. By year three, 206 had been recalled. The ***Obsidian*** restorations included 64 anterior crowns, 140 premolar crowns and 2 molar crowns (Figure 1). Both upper and lower teeth were restored. Tooth preparation guidelines provided by Glidewell Dental Laboratories were followed. All restorations were fabricated and the internal surface pre-etched by Glidewell Dental Laboratories. Forty restorations were cemented with self-adhesive resin cements and 186 were cemented with adhesive resin cements (Figure 2).

Fig. 1: Distribution of restorations recalled at three years.

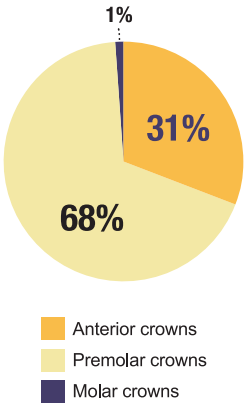
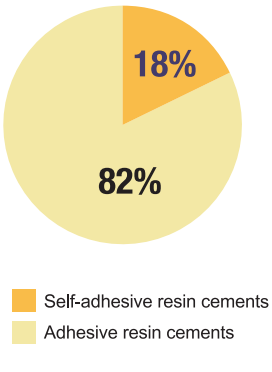


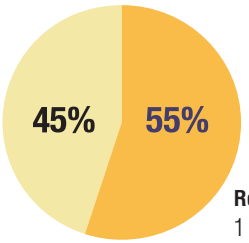
Fig. 2: Types of cements used with ***Obsidian*** restorations.



Results at Three-year Recall:

Two hundred and six restorations (88% of the total number of restoration placed) had been recalled by year 3 and were evaluated in the following areas: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, wear resistance, and retention. Of the recalled restorations, 114 had been in function for approximately 2 years and up to 3 years (55% of all recalled restorations) (Figure 3).

Fig. 3: Years in function of ***Obsidian*** restorations.



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

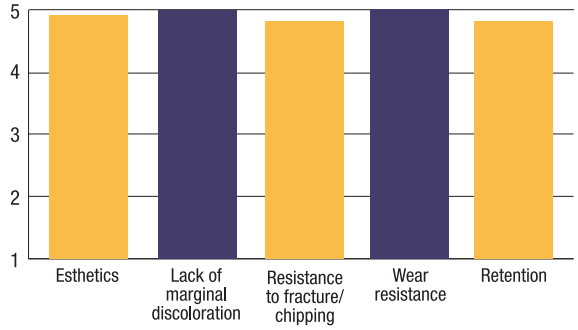


Obsidian, teeth #6-10 at three years.

Esthetics

There were 198 ***Obsidian*** crowns that received an excellent rating of five for esthetics (Figure 4). Eight crowns recieved a rating of 4. Patients, doctors and staff continued to report how natural and beautiful the crowns looked.

Fig. 4: Ratings of ***Obsidian*** restorations at three-year recall.



Resistance to Marginal Discoloration

To date, only two of the recalled ***Obsidian*** restorations have exhibited slight microleakage in the vicinity of the cervical margin and neither needed any intervention (Figure 4). This is unchanged from the 30-month clinical performance report.

Resistance to Fracture and Chipping

For recalled restorations, 197 of 206 ***Obsidian*** restorations (96%) exhibited excellent resistance to fracture/chipping (Figure 4). Of the remaining 9 crowns, 4 were premolar crowns that fractured, including one when the patient hit his head in a work-related injury. Two additional premolar crowns were replaced due to hairline cracks, and an anterior crown fractured in a patient who was a heavy bruxer and not wearing a bite splint.

Wear Resistance

The wear resistance of the recalled ***Obsidian*** crowns was superb, with 205 of 206 crowns receiving an excellent rating. The remaining crown received a rating of very good (Figure 4).

Retention

Other than the one crown that fractured, four recalled ***Obsidian*** crowns had debonded at 3 years (Figure 4). For one of these crowns, the core also debonded and a new core and crown was provided. The other three crowns were cleaned, etched and recemented using adhesive resin cement.

Summary

Over a three-year period, the clinical performance of recalled ***Obsidian*** crowns was exceptional. Esthetics, resistance to marginal discoloration and wear resistance were excellent. The restorations will continue to be monitored over time. At three years, ***Obsidian*** receieved a clinical performance rating of 98%.

Plus Series Forceps

+ + + + +

98% overall rating



A. Titan
www.atitan.com

Description

Plus Series Forceps are available in universal upper and lower, root, and molar patterns. They are constructed in Germany from 100% stainless steel. The advanced beak designs will refine your atraumatic extraction technique and promote aesthetic success. Specifically, the beveled and serrated beaks increase contact with the tooth and root surface, decreasing the chance of root and tooth fracture. ***Plus Series Forceps*** handle design is lightweight and balanced, offering a high level of control during extractions.

Indications

- Upper and lower extractions.

Unique Feature

- Beveled, serrated beaks for increased tooth and root surface contact.

Consultants' Comments

- *"We liked the profile and slightly thinner shape of the beaks."*
- *"Lightweight and balanced - great tactile feel."*
- *"The internal ridges on the beaks provided a good grip on the tooth."*
- *"Form and function was superb."*
- *"These forceps can grasp the tooth well down the root."*
- *"Efficient and good control, made all my extractions much more efficient."*
- *"Very solid feel and fantastic grip on teeth."*
- *"Using these forceps significantly reduced breakage of teeth and therefore reduced the number of extractions that became surgical cases."*
- *"The hinge was a little tight at first."*
- *"I'd like a smaller version as well."*

Clinical Tips

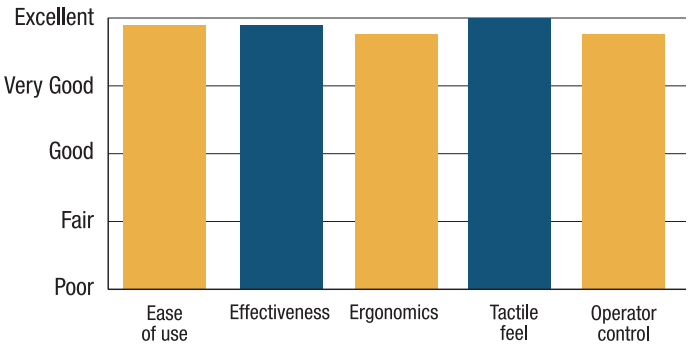
- Let their design and beveled, serrated beaks do the work. You don't need to apply much pressure with these forceps.
- Get down right by the bone level and then utilize the wedge shape to slide down even further into the sulcus. Excellent grip!
- Due to their straight shape, you need to grab teeth down further on the root, and also engage the crown of the tooth with the forceps beak higher up.

Evaluation Highlights

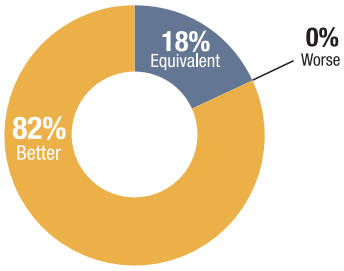
Plus Series Forceps were evaluated by 11 consultants for a total of 191 times.

- Easy to use.
- Efficient.
- Excellent grip and tactile feel.
- Good ergonomics.
- Good control, lightweight and balanced.

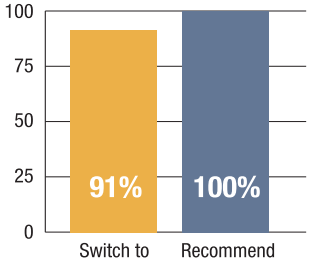
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



SecureTip

+ + + + +



Securetip
www.securetip.com

99% overall rating

Description

SecureTip is a disposable, locking saliva ejector that has a soft, round bonded tip for patient comfort. The saliva ejector screws into the base and locks into place with a durable, aluminum valve that prevents the saliva ejector from falling out. It is also designed with an embedded copper wire to maintain the shape of the saliva ejector after bending it. ***SecureTip*** is available in bags containing 100 saliva ejectors and one ***SecureTip*** aluminum valve is needed for each operatory using ***SecureTip.***

Indications

- Patient procedures requiring use of a saliva ejector.

Unique Features

- Unique locking mechanism.
- No O-rings, so no replacement needs.
- Vacuum line security against cross-contamination.

Consultants' Comments

- *"Locks perfectly every time. You don't have to worry about the tip falling out."*
- *"It's like having a second set of hands."*
- *"I can grab it during surgery without it falling off."*
- *"The tip is sturdy and bends easily. I was able to use it for retraction."*
- *"The adaptor lever is easy to use."*
- *"I purchased 20 packs with the adaptor to give out to my friends/ colleagues."*
- *"This is a great innovation - we are switching to this product."*
- *"I would prefer opaque or colored tips - patients don't like seeing what's in the saliva ejector."*
- *"Slightly bulkier and heavier than other saliva ejectors."*
- *"I would prefer a slightly smaller tip."*

Clinical Tips

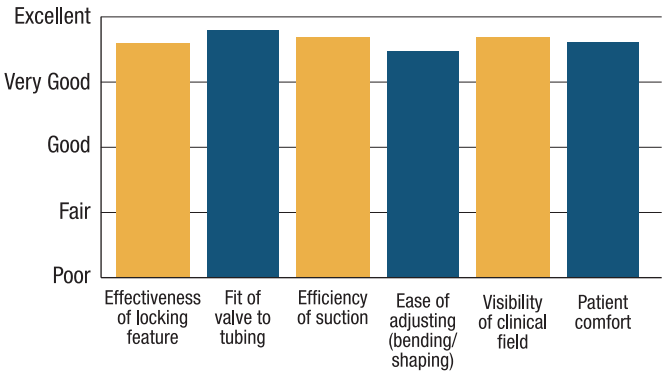
- Make sure you screw the saliva ejector all the way in before bending it.
- When bending the tip, bend towards the activation lever.
- Switch to ***SecureTip*** for a better working experience.

Evaluation Highlights

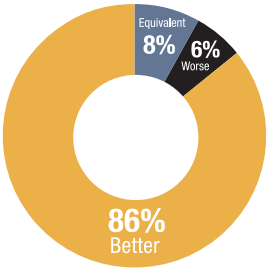
SecureTip was evaluated by 35 consultants with an average of 45 uses per consultant.

- Easy to use.
- Secure, stable and reliable connection.
- Locks in place.
- Bends easily.
- Efficient suctioning.
- Soft and durable tip.
- Strong and sturdy enough for retraction.
- Good access and visibility.
- Ergonomic.

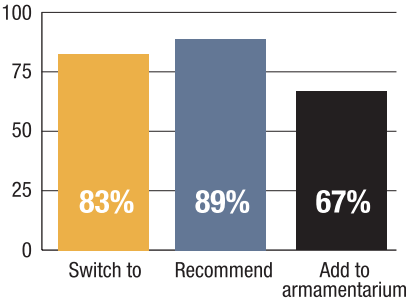
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Nano Freedom Light

++++

DentLight, Inc.
www.dentlight.com

86% overall rating



Description

Nano Freedom Light is a wireless, headlight system that integrates with all major loupes/frame designs. The headlight weighs 3g across the bridge of the nose. The LED light provides a focused, white beam of light of uniform intensity (20,000 lux and upgradable to 40,000 lux) with minimal glare and a color temperature of 5,500 K. ***Nano Freedom Light*** comes with two rechargeable lithium ion batteries, a battery pod that fits to the loupes/glasses frame temple, a universal clip-on, and a dual battery charger. Each battery has a run time of 3+ hours and takes 1 hour to fully recharge. Other components of the system include a composite filter, power adapter, optional custom loupe adapters and the manufacturer's instructions for use.

Indications

Clinical procedures where focused illumination is desirable.

Unique Features

Nano Freedom Light includes hands-free battery activation. It also integrates with all major loupes/glass frames using custom adaptors, including for Orascoptic, Zeiss, Designs for Vision, and Surgitel designs.

Consultants' Comments

- *"The cordless feature is super-convenient."*
- *"I like the freedom to take off my loupes without having to worry about a cord."*
- *"The light fits very easily on my magnified glasses and the clips are easy to install."*
- *"After trying this light, I can't imagine working without it."*
- *"Adaptable to loupes, lightweight, and no battery issues."*
- *"Easy to switch from one frame to another."*
- *"I had to change the battery in the middle of procedures. The battery life needs to be at least 4 hours."*
- *"The weight of the batteries caused the loupes to tilt to one side."*
- *"Lower light intensity than I would like, especially in the molar region. I would like to be able to select the light intensity."*

Clinical Tips

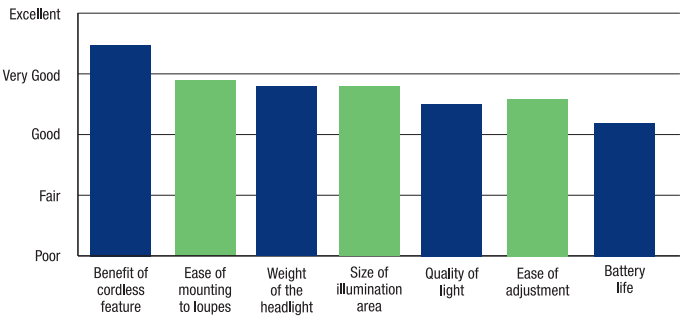
- If you find the loupes moving forward, strap the light on.
- Remember to use the filter if you are placing composites.
- Use zip ties if you find it difficult to use the mounting bracket - they work well.
- Adjust the battery pod to the most comfortable position on the glasses temples to minimize weight.
- Custom order with your loupe magnification for high intensity.
- Change battery during lunch break to run through a whole day.

Evaluation Highlights

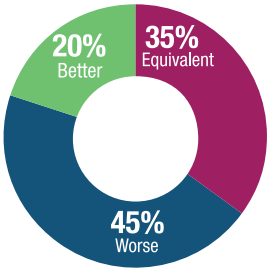
Nano Freedom Light was evaluated by 20 consultants who used it an average of 170 times.

- Convenient cordless feature.
- Easy-to-use hands-free activation.
- Easy to mount on frames and unobtrusive.
- The standard batteries are easy and inexpensive to replace.
- Adaptable to all major types of glasses.
- Easy battery charging.

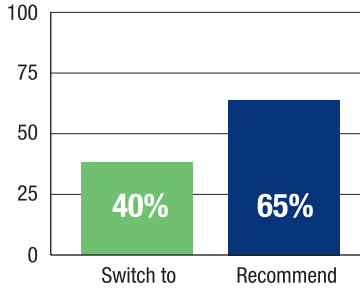
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Defend Diamond Burs

+ + + +

Mydent International
www.defend.com

89% overall rating

Description

Defend Diamond Burs are designed to provide durable, efficient, precise smooth cutting with minimum vibration and using minimal pressure. The burs are diamond-coated, stainless steel, fabricated using precision centered stainless steel #303 and German electroplating technology. ***Defend Diamond Burs*** are produced in a variety of shapes, including football, flat end, flat end taper, round end taper, and barrel shapes in coarse grit and super fine football-shaped burs. The burs are available in blister packs containing 10 burs.

Indication

Procedures where diamond burs are required.

Unique Feature

5-year shelf life.

Consultants' Comments

- *"Strong, long-lasting burs."*
- *"Excellent and efficient cutting, and smooth operation. There was no bounce or vibration."*
- *"Concentricity was great and they cut smoothly."*
- *"Initial cutting was excellent."*
- *"Good range of shapes."*
- *"I would switch due to their high quality and affordability."*
- *"After preparing one tooth, there was no more cutting power for a second one. They clogged more easily than the burs I usually use."*
- *"The shank was shorter than I am used to."*
- *"I would like to see an extra coarse diamond. The fine diamonds were fine!"*

Clinical Tips

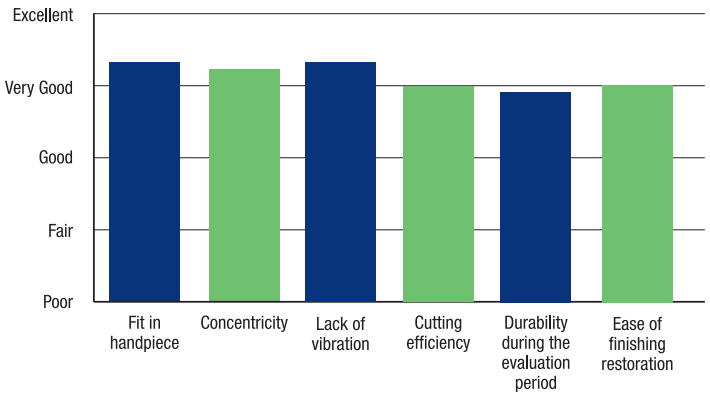
- The tapered diamond was excellent for occlusal reduction for a crown prep.
- Use lots of water and a sweeping motion while you're cutting.

Evaluation Highlights

Defend Diamond Burs were evaluated by 31 consultants for a total of 617 times.

- Smooth cutting.
- Fits well in handpiece.
- Good concentricity/lack of vibration.
- Good range of shapes.

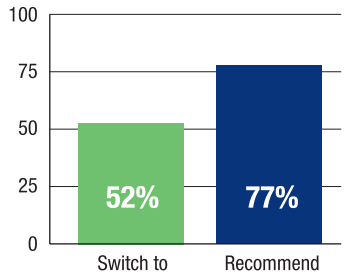
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



THE TREND IS CLEAR!

THE DENTAL ADVISOR
www.dentaladvisor.com

REQUEST A SAMPLE
is the resource for
Dental Professionals



Defend Carbide Burs

++++½

91% overall rating

Mydent International
www.defend.com

Description

Defend Carbide Burs are designed to be durable and provide fast, smooth cutting and vibration-free performance, which reduces the risk of early chuck failure. The burs are fabricated using Austrian carbide to specifications that exceed international standards. ***Defend Carbide Burs*** are available in blister packs containing 10 burs and in bulk packs containing 100 burs.

Indication

Procedures requiring use of carbide friction grip burs.

Unique Feature

Every bur is inspected using infrared technology for quality assurance.

Consultants' Comments

- *"Cut very efficiently and nicely. These burs are very sharp."*
- *"They cut smoothly and quickly, speeding up procedures."*
- *"There was a definite absence of drag and chatter using these burs."*
- *"Superior sharpness and durability compared to other burs I use."*
- *"These burs seem to cut super-fast and smoothly."*
- *"Very durable and long lasting even after autoclaving."*
- *"Simple, small packaging. It was easy to remove the burs."*
- *"The length of the fluted portion of the FG 330 bur is shorter than I am used to."*
- *"They lost their sharpness quickly and did not cut well."*
- *"A number of burs broke off at the shank - need to be stronger to prevent breakage during crown removal."*
- *"I would like to see different packaging that is designed more for single use and is easier to open than the blister pack."*

Clinical Tips

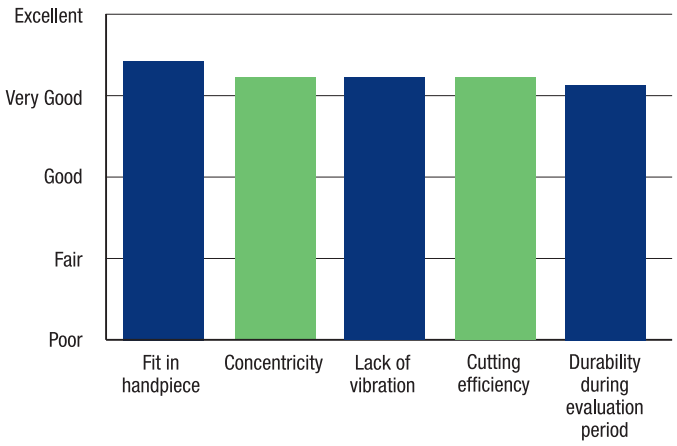
- Use for removing old amalgams - they cut through it very well.
- The FG 556 bur cuts preparation walls very nicely.
- The FG 1157 bur is great for producing rounded internal line angles - its size makes it possible to create conservative preparations.

Evaluation Highlights

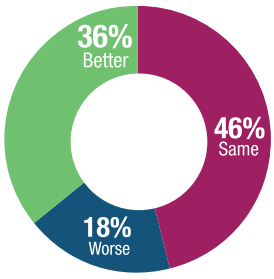
Defend Carbide Burs were evaluated by 33 consultants for a total of 638 times. Burs tested included FG 35, 330, 556 and 1157.

- Smooth cutting.
- Efficient.
- Good fit in handpiece.
- Absence of drag/vibration.
- Variety of shapes.
- Simple packaging.

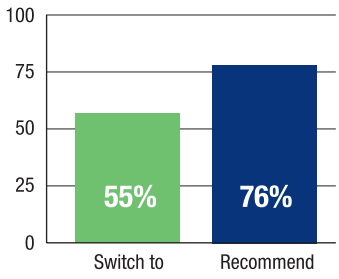
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



DEFENDLOC Sterilization Pouches

+ + + + ½

Mydent International
www.defend.com

91% overall rating

Description

DEFENDLOC Sterilization Pouches are reasonably-priced, self-sealing, paper-plastic sterilization pouches for use in autoclaves. The pouches are constructed of reinforced plastic and rugged medical-grade paper to help prevent perforations and tears, and have built-in internal and external indicators.
The pre-folded flap eliminates flap adjustment and misaligned seals, and helps to ensure that pouches are closed with an even and tight seal.
DEFENDLOC Sterilization Pouches are available in 10 sizes, ranging from 2.25" x 4" to 13" x 20", and are packaged in boxes with 200 pouches in one size.

Indication

- Sterilization packaging for instruments being sterilized in autoclaves.

Consultants' Comments

- *"Easy to use and efficient."*
- *"I like that the pouches have both an internal and an external indicator."*
- *"The pouches are strong - they did not rip when placing instruments into them."*
- *"Instruments did not pierce the paper or plastic, which can happen with generic pouches."*
- *"Easy to open and close."*
- *"The pre-folded flap is awesome, it helps to make sure the package is sealed properly."*
- *"Great product. I would switch in a heartbeat."*
- *"An autoclave pouch with "autoclave-friendly" blue dye would be desirable."*
- *"Stronger adhesive for the seal would be good."*
- *"The indicators were a little light, it would be nicer if they were darker for greater clarity."*

Clinical Tips

- Peel off the tab from over the adhesive, to avoid tearing and loss of adhesive.
- Make sure you seal them properly.

Unique Feature

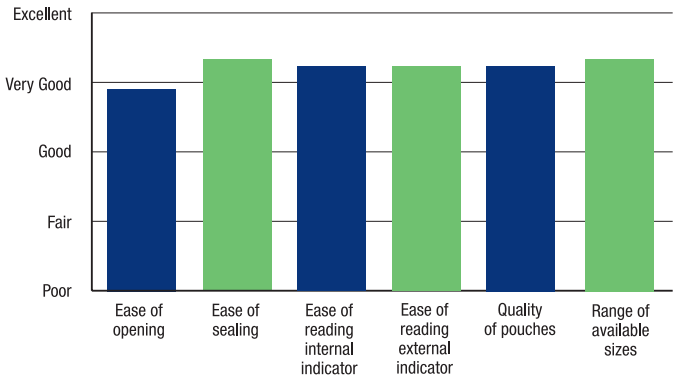
- Pre-folded seal.

Evaluation Highlights

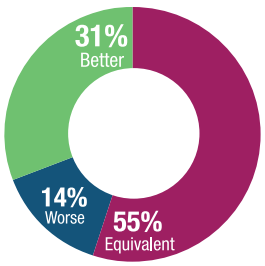
DEFENDLOC Sterilization Pouches were evaluated by 29 consultants more than 2,300 times.

- Easy to use.
- Efficient.
- Pre-folded seal for accurate sealing.
- Build-in internal and external chemical indicators.
- Strong pouch material.

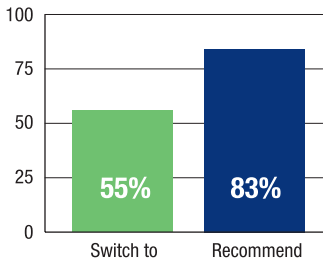
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



MTA Repair HP

+ + + + ½

Angelus
www.angelus.com

91% overall rating



Description

MTA Repair HP is a bioceramic, radiopaque repair cement for endodontic complications, direct pulp capping and pulpotomies. Calcium tungstate provides radiopacity without resulting in staining and an organic plasticizer gives it a putty consistency. ***MTA Repair HP*** promotes biological healing, and calcium ions present in the formulation foster remineralization. New root cementum can be formed using this product, dentin is remineralized and complete healing of peri-radicular tissues occurs. In addition, with a compressive strength of 44 MPa, it can also be used as a base material. Its low solubility enables its use in a moist environment, and hydration results in expansion and a complete seal. Setting of the material takes 15 minutes. ***MTA Repair HP*** is available in unit doses, delivered as ten 17 0.085g capsules and 10 units of liquid in a kit, and the manufacturer's instructions for use.

Indications

- Lateral and furcation perforations
- Apexification
- Internal resorption
- Pulpotomy
- Pulp capping
- Apexogenesis

Consultants' Comments

- *"Easy to use and apply."*
- *"I liked the individual single doses."*
- *"Great consistency and easy to pack."*
- *"Very good adherence to tooth surface without running or slumping."*
- *"Intuitive to load and dispense."*
- *"The setting time was too long. It is also difficult for children to wait 15 minutes while it sets, before getting their fillings. If I was placing a stainless steel crown next, I really liked it."*
- *"The amount of material in one dose is sufficient for smaller pulp perforations. I would like to see more in one dose so that there is enough for larger pulpotomies."*

Clinical Tips

- Use much less liquid than you think you will need and add as needed in small quantities.
- Dip the packing instrument in excess powder.
- Use a carrier to place.
- Avoid applying bonding agent directly to the set material, and air dry carefully to avoid losing material.
- Mix it to a putty consistency, and use a glass slab if you want to extend the working time.
- Watch the video on YouTube on consistency and how best to mix it.

Unique Features

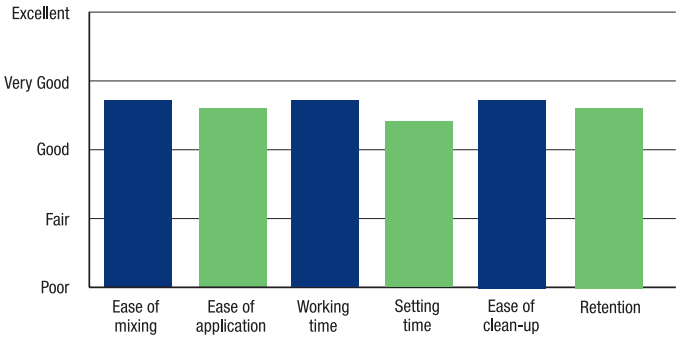
- Putty consistency for ease of handling.
- Highly alkaline, helping to prevent bacterial growth.
- Results in formation of new root cementum.

Evaluation Highlights

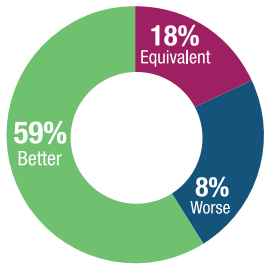
MTA Repair HP was evaluated by 22 consultants with a total of 185 uses. 62% of placement were for pulp capping and pulpotomy, and 22% were for reverse filling during periapical surgery.

- Handles well.
- Putty consistency.
- Tolerates a moist environment.
- Forms new cementum and remineralizes dentin.
- Radiopaque without staining tooth structure.
- Delivered in unit doses.

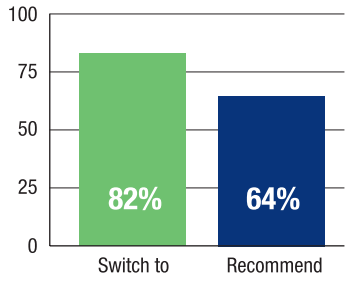
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Pinkband® Coated Contoured Matrix Bands

+ + + + +

PinkBand® Dental Solutions, Inc.
847-260-8330
www.PinkBand.com

96% overall rating

Description

Contoured Matrix Bands by ***Pinkband®*** are rubberized silicone-coated matrix bands designed for use during placement of class II composite restorations. The silicone coating provides superior moisture control, a non-stick surface for composite restorations and facilitates easy placement and removal of the matrix band. The contoured (pre-burnished) matrix band is available in both Regular (0.0018") and Thin (0.0013") thicknesses in packages of 50.

The original matrix bands with the ***PinkBand*** coating were first studied by THE DENTAL ADVISOR in 2013 and received 5 Plus Award Winner Ratings in 2013-2016 for performance and "improved moisture control." ***Pinkbands*** are available in every shape and size including Universal, Pedo and Subgingival.

Indications

- Placement of Class II restorations requiring use of a sectional or regular matrix band.
- Post and Core build-up restorations.

Consultants' Comments

- *"Very easy to place and remove."*
- *"The silicone coating makes them easy to remove - composite does not stick to them."*
- *"The matte finish on one side made it easier to remove the band after bonding procedures."*
- *"The contoured bands created a good contour for restorations."*
- *"The thin bands allowed pressure to be placed on composites that resulted in a good contour for the restoration."*
- *"A tight contact was possible without the band getting stuck or breaking."*
- *"To me, the **PinkBands** were a Godsend."*
- *"Overall great product and addition for my office."*

Clinical Tips

- Open interproximal contact to ease placement.
- Proper wedging is essential.
- Re-tighten matrix again after wedging, then wait 20 seconds.
- To prevent tearing, do not over-tighten the band.

Unique Features

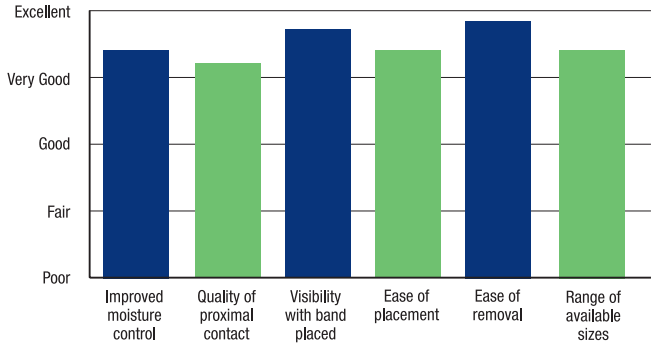
- Rubberized silicone coating improves moisture control.
- Does not stick to composites.
- Easy to remove.
- Thin and flexible that does not collapse during placement.
- Well-suited for large cavity preparations.

Evaluation Highlights

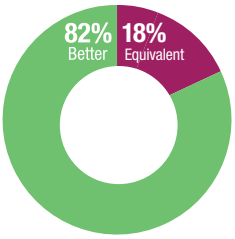
PinkBand Coated Contoured Matrix Bands were evaluated by 17 dental consultants, which placed 303 composite restorations using the Regular (0.0018") Contoured Matrix Bands.

- Easy to place.
- Easy to remove.
- Non-stick surface for composites.
- Moisture control.

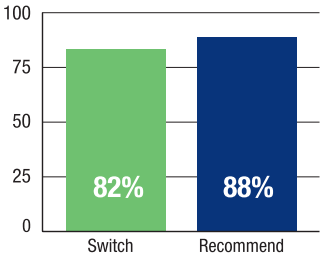
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



THE DENTAL ADVISOR

DID YOU KNOW?

Many products reported on in THE DENTAL ADVISOR have free samples available for our readers. To sample products, go to the article and look for this icon, or go to **www.dentaladvisor.com/clinical-evaluations** and view a list of samples available.



Order Samples

PRIMA Quick

+ + + +

86% overall rating

BJM Laboratories, Ltd.
www.bjmlabs.com



Description

PRIMA Quick is a 6th-generation, self-etching, two-bottle primer and bonding agent adhesive system. After application, the primer is left undisturbed for 15 seconds before blowing air over it for at least 10 seconds to remove the solvents. The bonding agent is then applied and air blown for at least 10 seconds to remove solvents or until no visible movement is present. Next, the bonding agent is light-cured (20 seconds) or self-cured if the Auto Cure Activator was added. A second application is required for preparations primarily in dentin, but not cured. For indirect restorations, the ***PRIMA Quick*** adhesive system is used in conjunction with High-Q-Bond adhesive resin cement. ***PRIMA Quick*** consists of a 10 mL bottle each of primer and bonding agent, accompanied by microbrushes, a mixing well and a laminated instruction card. ***PRIMA Quick*** must be kept refrigerated.

Indications

- Use for composite and compomer direct restorations.
- Use for self-cure and light-cure composite resin cements for crowns, bridges, inlays and onlays.
- Core build-up and post cementation.

Consultants' Comments

- *"Provides a surface that holds the first layer of resin material very well."*
- *"Quick and easy application."*
- *"Invisible following application and absolutely no 'white line' margins."*
- *"I like the fact you can use it as a self-cure material."*
- *"It would be nice if it did not require refrigeration."*
- *"The bottles need 'step' numbers on them to distinguish the sequence of use."*
- *"It would be good if there was one application for dentin, rather than two."*

Clinical Tips

- Use a smaller diameter brush.
- Use a larger brush head to hold more material.
- Open the bottle away from the patient as it has a strong odor.
- Dispense the primer just before you need it, to avoid evaporation.
- The primed surface gloss is better if the tooth is slightly wet before applying the primer.

Evaluation Highlights

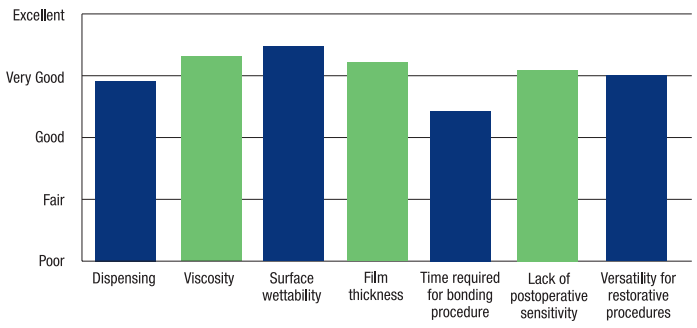
PRIMA Quick was evaluated by 33 consultants, with an average of 20 uses per consultant.

- Great for anterior composites.
- Good esthetics and a strong bond.
- Predictable handling, easy to dispense and apply, and the film thickness is low.
- Very good wettability with both the primer and the bonding agent.
- Covered the tooth/preparation very easily.
- Patients had no post-operative sensitivity.
- A few patients commented about the strong odor.
- The application technique is a tad time consuming.
- The microbrush brush head is large and the thin neck bends a bit too easily.

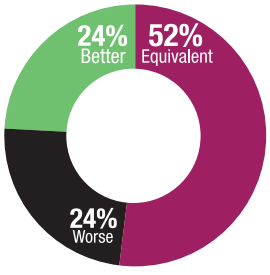
Unique Features

PRIMA Quick can be be self-cured if the Auto Cure Activator was added to the bonding agent, rather than light-cured for 20 seconds.

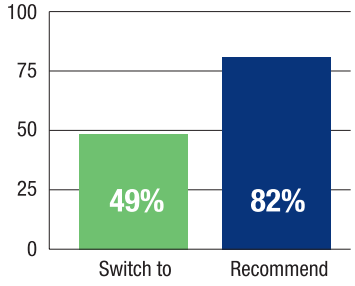
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Q-Core Syringable

++++

88% overall rating



BJM Laboratories, Ltd.
www.bjmlabs.com

Description

Q-Core Syringable is a stackable, dual-cured, fluoride-releasing, radiopaque composite core build-up material. The material's viscosity allows easy placement, and it flows under pressure. The dual-cured option allows for bulk fill. Light curing takes 40 seconds, with a depth cure of 8 mm for shade A3 and 6 mm for shades blue and white. After mixing, self-curing takes 3 minutes. ***Q-Core Syringable*** cuts like dentin once cured and possesses a high compressive strength (250 MPa), high flexural strength (200 MPa), and contrast for visualization during trimming. ***Q-Core Syringable*** is available in shades (A3, blue and white), in 50 mL cartridges and in 5 mL automix syringes. Intra-oral tips are available in fine, extra fine and extra extra fine.

Consultants' Comments

- *"Viscosity lets the material flow around posts, yet it has a positive feel upon placement."*
- *"Great adaptability and flowability."*
- *"Good control of flow - can adjust the flow by selecting the size of the tips."*
- *"It cut almost like dentin, and is the closest to dentin that I have found."*
- *"Good tip sizes for various size teeth/locations."*
- *"Dual-cured option is great."*
- *"I liked the white shade for anterior teeth."*
- *"I would like a faster cure."*
- *"I would prefer a thicker material - it was a little too runny and slumped."*
- *"I would like to see more opaque and more translucent shades."*
- *"The addition of more tips and thinner tips would be good."*

Clinical Tips

- Bleed the tubes before placement of a dispensing tip.
- Use the blue or white shade for a big core to easily differentiate the material from the tooth.
- Use in situations where you would use a matrix band.
- Apply small amounts and briefly tack cure to help with stacking of the material.
- Use the smaller tips around posts to help with placement.
- Use with ***Ribbond*** for post build-ups in teeth that have been treated endodontically.
- Cure for at least 60 seconds before trimming.

Indication

- Core build-ups.

Unique Features

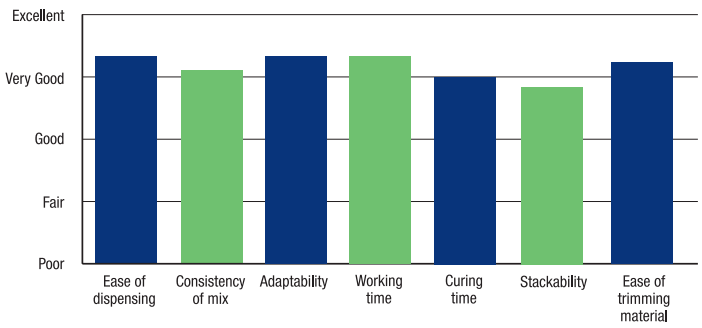
- Releases fluoride
- Uses exclusive "Hyperbranched Technology" and nanofillers for superior mechanical properties.

Evaluation Highlights

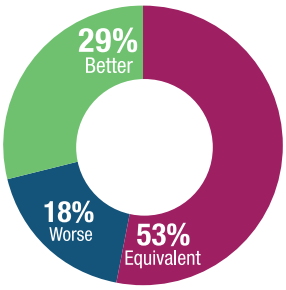
Q-Core Syringable was evaluated by 34 consultants for a total of 531 times.

- Easy to dispense.
- Easy to use.
- Flowable.
- Stackable.
- Easy to trim.
- Radiopaque.

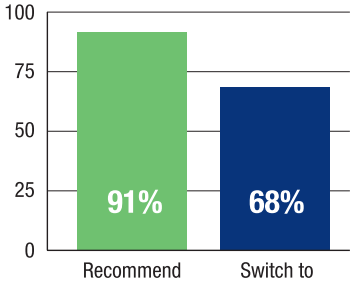
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Q-Crown

+ + + ½

84% overall rating



BJM Laboratories, Ltd.
www.bjmlabs.com

Description

Q-Crown is a resin-based, biocompatible, self-cured direct temporization material. After mixing, self-curing takes 3 minutes. ***Q-Crown*** offers a high compressive strength (180-220 MPa after 24 hours) and flexural strength (40-60 MPa after 10 minutes; 120-150 MPa after 24 hours). Initial set occurs within 1 to 1.5 minutes of mixing. The temporary should be removed from the preparation(s), together with the impression, during the initial set at 1 to 1.5 minutes while it is still easy to remove. The temporary is removed from the impression 2 to 2.5 minutes after mixing and excess removed, before wiping the temporary with alcohol to remove the air-inhibited layer. Final set takes 4 to 5 minutes from initial mixing, after which the restoration is finished and polished. ***Q-Crown*** glaze is used on the cemented temporary restoration and light-cured on each surface for 20 seconds, providing for a high gloss. Q-Crown is delivered in a kit with three, 5 mL automix syringes, one each in shades A, A2 and A3. Other components in the kit include 25 mixing tips, 25 microbrushes, 1 5 mL bottle of ***Q-Crown*** light-curing glaze and the manufacturer's instructions for use.

Consultants' Comments

- *"I found it easy to remove from the tooth and easy to trim."*
- *"Temporary restorations were esthetic, looked natural and the glaze looked very nice."*
- *"Great product. Strong, easy to handle and esthetic."*
- *"The small tips mean there is little waste and they store nicely in the kit."*
- *"The material's hardness and accurate fit are both a strength and a weakness. We had to section off our long-term temporaries, but the material served its purpose."*
- *"Patients did not like the taste."*
- *"The material fractured easily, and crowns were brittle. It needs to be stronger."*
- *"Margins were not crisp."*
- *"I found it less user-friendly compared to other auto-mix materials."*
- *"I would like to see it available in a gun dispenser and auto-mix capsules."*

Clinical Tips

- Use a timer and make sure that you pay attention to the working time.
- To help prevent the material from sticking to the tooth, apply lubricant to the preparation before creating the temporary.
- To avoid bubbles, be sure to bury the syringe tip when extruding the material from the syringe.
- Spray the interior of the impression with a silicone spray.
- I would include this is my armamentarium to have on hand for bruxers.
- Best for long-term temporaries.

Indication

- Direct temporization chairside.

Unique Features

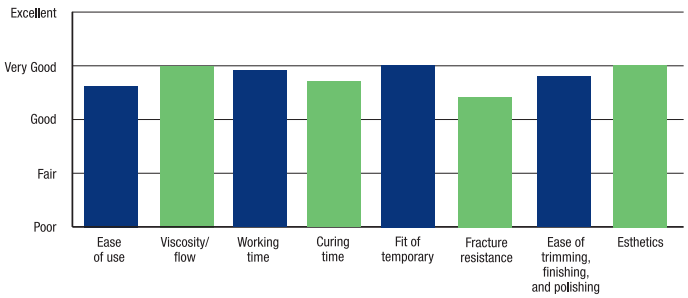
- Exceptionally tight marginal seal for precision fit and high mechanical strength, making it suitable for long-term temporary crowns and bridges.
- Polymerization does not cause a high-temperature exothermic reaction.

Evaluation Highlights

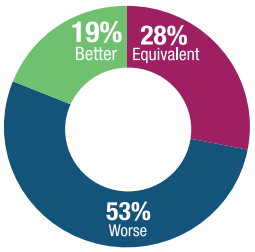
Q-Crown was evaluated by 32 consultants for a total of 395 times.

- Fast set.
- Good fit.
- Low shrinkage.
- Easy to trim.
- Esthetic temporaries in the available shades.

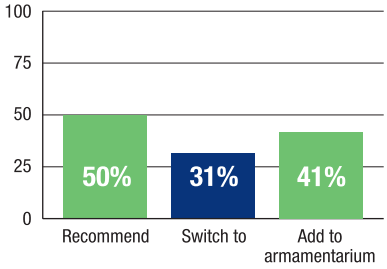
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



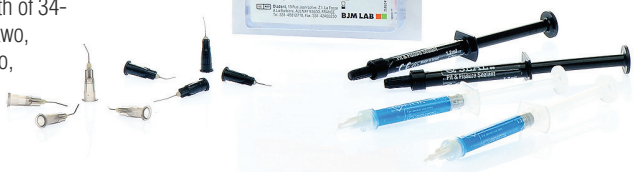
Q-Seal

+ + + +

86% overall rating

BJM Laboratories, Ltd.
www.bjmlabs.com





Description

Q-Seal is a resin-based, light-cured, fluoride-releasing pit and fissure sealant. It is easy to apply using the tips, flows easily, has a high compressive strength (150 MPa), and high bond strength of 34-40 MPa. ***Q-Seal*** is delivered in a kit with two, 1.2 mL syringes containing gel etchant; two, 1.2 mL syringes containing the resin-based sealant; and 8 delivery tips.

Indication

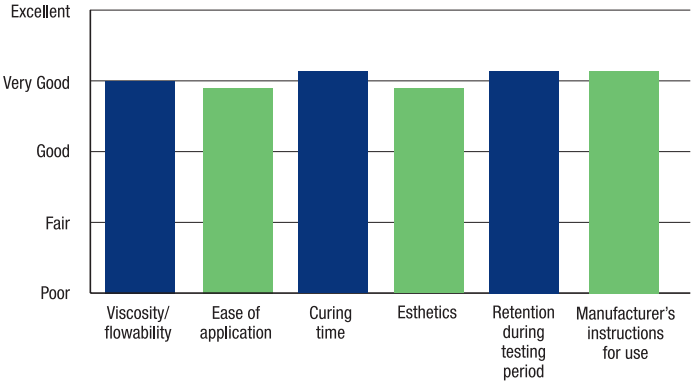
Pediatric pit and fissure sealants.

Evaluation Highlights

Q-Seal was evaluated by 30 consultants for a total of 549 times.

- Easy to dispense.
- Flows well.
- Easy to apply.
- Requires no primer or bonding agent.
- Good curing time.

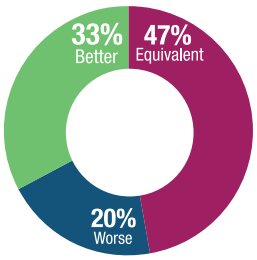
Key Features:



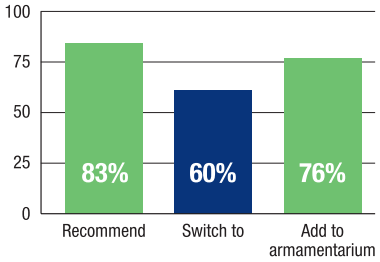
Consultants' Comments

- *"Great viscosity and the sealant material flows well."*
- *"Dispensing is fabulous and it's easy to apply."*
- *"Very easy to work with."*
- *"I just love its flowability and the absence of air bubbles."*
- *"I liked that no primer or bonding agent was needed."*
- *"Nice small dispensing tips."*
- *"I found it too opaque."*
- *"It was almost too thin - I'd prefer a little thicker."*
- *"I would like to see a tint added that makes it easier to see during application, and then turns opaque after it is light-cured."*

Compared to Competitive Products:



Percentage of Consultants Who Would:



Clinical Tips

- Use only a small amount, it flows well and goes on evenly and precisely.
- Use a microbrush to help spread the material and remove any air bubbles prior to curing.
- Make sure to remove any excess before curing.

SPECIAL THANKS TO:

Select Senior Clinical Consultants (Over 20 years):
J. Amara, CT · R. Fisher, OH · W. Gregory, MI · E. Katkow, MD · J. Lockwood, MI · J. Mayer, OH · W. Nagy, TX · G. Poy, MI · J. Shamraj, MI · R. Trushkowsky, NY · P. Yaman, MI

Senior Clinical Consultants (15-19 years):
K. Baker, TX · F. Berman, PA · J. Bostic, OH · L. Brimhall, MT · M. Briskin, NY · L. Brown, MI · W. Brownscombe, MI · R. Ciccone, MI · C. Colbert, MI · M. Conrad, PA · J. Dingman, WI · R. Dost, VA · J. Doueck, NY · M. Dwoskin, MI M. Eannaccone, NY · R. Engle, IL · K. Fairbanks, MI · M. Feinberg, NY · K. Fischer, IN · G. Franco, NY · N. Garlisi, OH · K. Goodman, MI · S. Graber, IL · P. Grandsire, NY · E. Gutman, NY · D. Haas, Ontario · K. Hamlett, TX · S. Harlock, MI G. Hart, OH · R. Herwig, KS · J. Kaminski, MI · R. Kaprielian, NJ · M. Kastner, OH · D. Keren, NY · M. LaMarche, WA · J. Leitner, MI · S. Lever, MD · R. Lezell, MI · M. Livernois, NC · M. Man, NY · B. Manne, FL · N. Mansour, MI N. Markarian, CA · C. McLaren, MI · J.W. Mikesell, IL · R. Mizrahi, NY · G. Mosso, PA · E. Mosso, PA · J. Nash, MI · A. Nazarian, MI · E. Odenweller, OH · R. Oshrain, NY · J. Paris, TX · D. Parris, GA · M. Patel, MI · D. Peterson, MD T. Pieper, WY · D. Pitak, MI · V. Plaisted, NY · D. Qualliotine, NC · G. Raichelson, Ontario · C. Reed, MI · G. Reskakis, NY · K. Schwartz, FL · J. Shea, MO · B. Shumaker, NJ · B. Sims, NY · P. Symeonides, NY · H. Tetalman, OH C. Trubschenck, CA · S. Ura, NH · W. Walcott, MI · M. Waranowicz, MI · L. Wee, MI · D. Wojtowicz, MI · H. Yeung, CA · M. Zahn, MI · P. Zanetti, MI · S. Zimmer, MI

Clinical Consultants (14 years or less):
A. Albright, NY · N. Alexa, MI · G. Alfe, IL · B. Argersinger, NC · P. Arsenault, MA · A. Bagchi, MI · B. Barricklow, OH · L. Bartoszewicz, MI · J. Bechtel, MI · C. Bhatti, MI · L. Bishop, MI · T. Bizga, OH · G. Bloomfield, MI · C. Brown, LA E. Brust, MI · S. Bunek, MI · J. Bunek, MI · T. Burns, MI · J. Bush, PA · H. Cadorette, MI · S. Campbell, MI · P. Campo, NY · P. Cracchiolo, MI · D. Chacko, TN · P. Chaiken, IL · D. Chenevert, MI · R. Cherry, FL · M. Connelly, MI W. K. Dancy, GA · C. Dietz, OH S. Dillingham, NY · K. Dobracki, MI · J&E Duski, MI · A. Dutko, MI · M. Elford, MI · O. Erdt, MI · M. Evers, OH · F. Facchini, MI · F. Falcao, FL · L. Feldman, NJ · M. Frankman, SD · M. Glovis, MI · C. Goldin, MI M. Grant, MI · A. Green, MI · R. Green, MI · B. Greenwood, UT · J. Griffin Jr., MO · P. Gronet, KY · H. Gulati, MA · J. Haddad, MI · J. Hastings, CA · D. Hauck, CA · J. Hengehold, MI · B. Herrmann, CA · D. Hock, MI · C. Huang, CA P. Indianer, MI · J. Ireland, MI · C. Jaghab, MI · J. Jaghab, MI · M. Kachi-George, MI · D. Kapp, NY · J. Karam, MI · E. Kelly, GA · J. Kelly, GA · L. Kemmet, MN · C. Knapp, MI ·M. Koczarski, WA · B. Kolb, MI · D. Kuras, MI · C. Laird, OR C. Latham, OH · R. Le, NC · I. Levine, NY · E. Lowe, BC, CAN · J. Lusby, MI · C. Manduzzi, MIK. Mantzikos, NY · F. Margolis, IL · A. Marlow, MI · T. McDonald, GA · J. McLaren, MI · M. McMullin, MI · M. Migdal, MI · J. Minsky, CA M. Moeller, MI · G. Molinari, MI · L. Montes, NY · M. Murphy, MI · L. Musgrave, MI · N. Nealis, IL · J. Neuman, MI · J. Olitsky, FL · J. Olsen, MI · F. Orlando, NY · S. Owens, MI · M. Paquette, MI · J. Parrott, MI · D. Perkins, MI S. Picazio, NJ · C. Pike, MI · C. Piontkowski, MI · B. Pittsley, MI · T. Poirier, MI · D. Radtke, MI · G. Ramos, NY · C. Ramsey, FL · S. Reddy, MI · T. Reeves, TN · N. Rego, CA · J. Riggs, MI · J. Rowe, AR · J. Rubin, DC · D. Ruhlig, MI A. Saddy, MI · P. Scalia, MI · C.Scanlon, MI · J. Schau, MI · L. Seluk, MI · R. Selvan, NJ · M. Shapiro, MI · A. Shemesh, IN · B. Silver, MI · S. Simpson, MI · J. Smith, MI · C. Stevens, OK · B. Stevenson, MI · B. Stieper, MI · S. Tamber, MI G. Tarantola, FL · T. Teel, IN · C. & L. Thorpe, MI · A. Valentine, MI · Lyn. Vandelaar, MI · H. Vann, MS · H. Whitt, MI · L. Williams, MI · K. Wilson, MI · D. Wolf, MA · W. Wright, CA N. Yaeger, MI · S. Yun, MI · D. Young, MI · J. Zanetti, MI

Laboratory Consultants:
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