

THE DENTAL ADVISOR

Improving Patient Care Through Research & Education

March-April 2017

Vol. 34, No. 2

Simplifying composite restorations

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www.dentaladvisor.com

RATINGS:

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

**March-April
2017**

Vol. 34, No. 2

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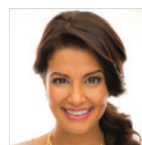
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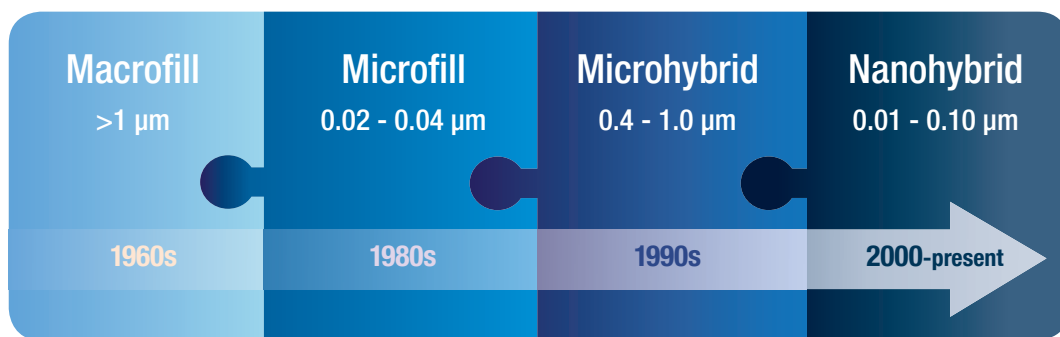
THE DENTAL ADVISOR team just got back from the Chicago Dental Society's Midwinter Meeting, where we saw countless new and innovative products. The sheer volume of products currently on the market is enough to overwhelm even the most experienced clinicians. The variety of different resin composites in particular marks one of the most significant changes in technology, as it has resulted in the creation of several categories and sub-categories of composites, which increase the complexity of choosing an appropriate product for a given application.

The goal of this issue is to simplify both the product selection process and the composite procedure from start to finish. We explain new terms and technology, recommending products evaluated by THE DENTAL ADVISOR, and offering clinical tips for use for both anterior and posterior restorations. Finishing and polishing and LED light curing units are discussed as well. I hope you find this information useful in your daily practice.

This issue is my personal favorite because it illustrates our new approach to presenting information. You can explore each step of resin composite procedures in one concise issue. As always, I welcome your comments and suggestions. You can reach me at drbunek@dentaladvisor.com. Thank you for your continued support and reading!

Evolution and Classification of Composites

The most common classification system for resin composites considers the distribution and average particle size of the composite filler. The first composites, macrofills, were highly filled (70-75% by weight) and contained large particle sizes ($>1\mu\text{m}$) making them prone to plucking, resulting in excessive wear. As a result, the composites introduced thereafter all contained smaller filler particles and can be classified into three main categories: **microfills**, **microhybrids**, and **nanohybrids**.



Microfills: Particle size: $0.02-0.04\mu\text{m}$

The extremely small filler particles ($0.02\mu\text{m}$ to $0.04\mu\text{m}$) and lower filler load (35%-50%) of microfills contribute to the translucency, long lasting high polish, and best wear resistance of this class of materials. The ability to mimic the appearance of enamel make them most suitable for direct composite veneers and Class III, IV, and V restorations. The reduction in filler lowers the strength of these materials; therefore, they should not be used in high-stress areas.

Microhybrids: Particle size: $0.4-1.0\mu\text{m}$

Microhybrids were developed to combine the strength of larger particle size with the esthetics of smaller microfill particles. Microhybrids generally have a filler content of approximately, 75% by weight, with particles ranging in size from ($0.4\mu\text{m}$ to $1.0\mu\text{m}$). The particle size and filler load give the material the strength and wear resistance needed to perform in the posterior. The polish of these materials is initially satisfactory; however, they lose luster over time. They are the most opaque of all composites and, therefore, work ideally in combination with a microfill layer.

Universal Nanohybrids: Particle size: $0.01-0.10\mu\text{m}$

Nanohybrids contain the smallest particles and are the most recent class of resin composite materials. They continue to gain in popularity because of their excellent strength, esthetics, wear resistance, handling, and polishability. They are referred to as universal composites because the combination of strength and esthetics make them suitable for both anterior and posterior applications.

Simplifying Universal Composites

Filtek Supreme Ultra Universal Restorative 3M

Awarded Top Universal Composite Multilayer for 5 years in a row, **3M™ Filtek™ Supreme Ultra Universal Restorative** provides outstanding strength, wear resistance and polish retention to give patients beautiful, long-lasting results. With a wide range of shades and opacities, **Filtek Supreme Ultra Universal Restorative** offers excellent polish retention for unsurpassed esthetics. By providing versatility and a wide range of indications, **Filtek Supreme Ultra Universal Restorative** is strong enough for posterior fillings and esthetic enough for anterior work, preparing dentists for any clinical situation.



Estelite Sigma Quick® Tokuyama Dental America

Awarded Top Universal Composite 8 years in a row, **Estelite Sigma Quick** is a supra-nano filled resin composite with patented spherical filler technology. With a filler weight of 82% (71% volume) this unique world-class technology delivers a flexible shade matching process, exceptional handling and long-term wear resistance. **Estelite Sigma Quick** can be used for anterior and posterior restorations, composite veneers, diastema closures and composite/porcelain repairs.



Product	Company	Evaluation Rating
Admira Fusion	VOCO	93%
Aura EASY	SDI (North America) Inc.	91%
BEAUTIFIL II	SHOFU Dental Corporation	94%
Estelite Sigma Quick	Tokuyama Dental America	99%
Filtek Supreme Ultra	3M	92%
Kalore	GC America	91%
NovaPro Universal	Nanova	91%
Reflectys	Itena North America	91%
Tetric EvoCeram	Ivoclar Vivadent, Inc.	96%
Venus Diamond	Kulzer	91%
Venus Pearl	Kulzer	91%

What's New: Harmonize (Kerr Restorative)

Harmonize™ begins with ART, Adaptive Response Technology, a nanoparticle filler network that helps you achieve lifelike restorations with more ease and simplicity than ever. With better blending capabilities and enhanced structural integrity, the ART of **Harmonize** provides your restorations with exceptional strength and unmatched esthetics.

The special controlled size and spherical shape of the ART nanoparticle filler network allows for light diffusion and reflection similar to human enamel. This leads to an enhanced chameleon effect for better blending and improved esthetics overall. Furthermore, the adaptive viscosity of **Harmonize** delivers easier handling and shaping without stickiness, slumping, or pullback.

The reinforced nano-scale filler particle network also has improved mechanical properties and it's more reactive with resin for efficient polymerization, ensuring your restorations have increased strength and durability. **Harmonize** removes the complexity of esthetic restorations that last, it's everything you've been looking for in a universal composite. **Website:** KerrHarmonize.com



Tetric EvoCeram Ivoclar Vivadent

A multiple year award winner at THE DENTAL ADVISOR, **Tetric EvoCeram** is a universal, nanohybrid composite. It is indicated for Class I, II, III, IV, and V restorations; veneering anterior teeth, splinting of mobile teeth; and repair of ceramic and composite veneers. **Tetric EvoCeram** takes advantage of nanotechnology to allow for better polishing and lower shrinkage. Esthetics as well as handling are the highest rated features of the product. Natural shade blend with surrounding dentition ensures outstanding restorative results. The filler technology employed in **Tetric EvoCeram** is based on an optimum blend of different fillers and filler sizes. Clinicians enjoy a longer working time due to the patented light sensitivity filters. THE DENTAL ADVISOR has followed **Tetric EvoCeram** for 10 years in vivo and it continues to receive excellent ratings for esthetics, resistance to fracture and chipping, resistance to marginal discoloration and wear.



Venus Pearl Kulzer

Awarded Top Esthetic Composite for 3 years in a row, **Venus Pearl** was highly rated by our clinical consultants for its excellent life-like translucency, handling, and polishability. This universal composite can be used in single shades or layered when desired. The full range of shades available offer three levels of translucency, including incisal shades, a pink shade for gingiva, and a green shade for cores. Consultants especially appreciated the sculptability of **Venus Pearl**. The material polishes to a high luster, which makes it an excellent choice for esthetic restorations.



Clinical performance of composites over time

Venus Pearl with iBond TE & SE (Kulzer) 1-YEAR CLINICAL PERFORMANCE



190
Restorations
placed

169
Reviewed
at recall

*This product received a
**99% clinical
performance rating**
at the 1-year recall.*

Venus Pearl used with **iBond Total Etch** and **iBond Self Etch** received excellent ratings for resistance to fracture/chipping, esthetics, resistance to marginal discoloration, wear resistance, lack of sensitivity, and retention at one year.

A DETAILED REPORT CAN BE FOUND AT:

www.dentaladvisor.com/evaluations/venus-pearl-with-ibond-total-etch-and-ibond-self-etch-1-yr

Estelite Sigma Quick® (Tokuyama Dental America) 5-YEAR CLINICAL PERFORMANCE



2,800
Restorations
placed

1,511
Reviewed
at recall

*This product received a
**96% clinical
performance rating**
at the 5-year recall.*

Among over 1500 **Estelite Sigma Quick** recalled restorations, the vast majority performed exceptionally well over the 5-year period. The composite has excellent translucency and blends very well with surrounding tooth structure. The material sculpts very easily especially when cosmetically bonding anterior composites.

A DETAILED REPORT CAN BE FOUND AT:

www.dentaladvisor.com/evaluations/estelite-sigma-quick-5-yr

Herculite™ Ultra and Optibond™ XTR (Kerr Restoratives) 5-YEAR CLINICAL PERFORMANCE



165
Restorations
placed

165
Reviewed
at recall

*This product received a
**98% clinical
performance rating**
at the 5-year recall.*

Herculite™ Ultra and **Optibond™ XTR** performed well at the five-year recall. Restorations received excellent ratings for esthetics, resistance to fracture/chipping, resistance to marginal discoloration, wear resistance, and lack of postoperative sensitivity as reported by patients.

A DETAILED REPORT CAN BE FOUND AT:

www.dentaladvisor.com/evaluations/herculite-ultra-and-optibond-xtr-5-yr

Filtek™ Supreme Ultra Universal Restorative (3M) 6-YEAR CLINICAL PERFORMANCE



598
Restorations
placed

302
Reviewed
at recall

*This product received a
**98% clinical
performance rating**
at the 6-year recall.*

Overall **Filtek™ Supreme Ultra Universal Restorative** performed exceptionally well in the categories of esthetics, resistance to fracture/chipping, resistance to marginal discoloration, and wear resistance.

A DETAILED REPORT CAN BE FOUND AT:

www.dentaladvisor.com/evaluations/filtek-supreme-ultra-universal-restorative-6-yr

Flowable Materials: New Trends & Terminology

TRADITIONAL LOW-FILLED FLOWABLES

Many flowable composites have been introduced to the dental profession since the first light-cured flowable composite arrived on the market in the mid 1990s. This small accessory once only used as an adjunct to certain procedures has now become widely accepted, providing expanded options for restorative dentistry. Until recently, most flowables contained higher resin content and lower filler loading when compared to conventional composites. In general, the reduction in filler lowers the mechanical properties and increases the flowability, while the increase in resin content makes them more prone to polymerization shrinkage. Some indications include: cavity liner, pit and fissure sealants; minimally invasive class I, II, or III restorations; class V restorations, and the repairs of small defects in direct and indirect restorations (*3M Filtek Supreme Plus Flowable*, 3M; *Tetric EvoFlow*, Ivoclar Vivadent, Inc.; *GRADIA DIRECT LoFlo*, GC America, Inc.; and *Estelite Flow Quick*, Tokuyama Dental America).

ESTELITE FLOW QUICK®

Tokuyama Dental America

Estelite Flow Quick is a universal supra-nano filled medium-flow, light-cured resin composite. Building on the proven success of Estelite's spherical filler technology, *Estelite Flow Quick* delivers superior esthetics, ideal handling, excellent polishability and outstanding long-term mechanical strengths. *Estelite Flow Quick* can be used for direct anterior and posterior restorations (particularly for small/shallow/tunnel shaped preps), cavity lining, blocking out cavity undercuts (before fabrication of indirect restorations) and composite/porcelain repair.



Camouflage Flowable

Glidewell Laboratories

Camouflage® NanoHybrid Composite is specially formulated to have uncompromising esthetics and strength, positioning itself as a versatile, affordable addition to any dental practice. Deliverable via either syringe or capsule method, light-cured material that can be quickly polished to resemble glazed enamel. It blends beautifully with the surrounding tooth and is available in two viscosities: Universal (21 shades) and Flowable (9 shades). When tested in THE DENTAL ADVISOR Biomaterials Research Center, *Camouflage Flowable* was found to have a high flexural strength of 126 MPa.



UNIVERSAL HIGHLY-FILLED FLOWABLES

In recent years, manufacturers have introduced flowables with higher filler content in varying viscosities. The higher filler content increases strength and wear resistance, lowers polymerization shrinkage, and allows the material to be stacked, making the composite suitable for class I-V restorations (*BEAUTIFIL Flow Plus*, SHOFU DENTAL CORPORATION; *G-aenial Universal Flo*, GC America; *GrandioSO Heavy Flow*, VOCO; *CLEARFIL MAJESTY ES Flow*, Kuraray Noritake Dental Inc.).



**Increase in fillers
results in increase in strength
and decrease in flowability**

G-aenial Universal Flo GC America

G-aenial Universal Flo

is a universal light-cured composite with a flowable viscosity. Unlike other flowable composites that have limited indications, *G-aenial Universal Flo* is indicated as a direct restorative for class I, II, III, IV, and V cavities. It may also be used as a pit and fissure sealant, for sealing hypersensitive areas, for the repair of direct esthetic restorations, as a temporary crown and bridge material, for blocking out undercuts, and as a liner or base. The material self-levels after placement. Esthetics and blending to existing tooth were rated highly. The material has a unique intra-oral tip, designed to minimize dripping and can be bent for use in difficult to reach areas.



CLEARFIL MAJESTY ES Flow Kuraray Noritake Dental

Awarded top highly-filled flowable composite 2 years in a row,

CLEARFIL MAJESTY ES Flow has excellent esthetics and polishability when used as a filling on the surface. It can also be used as a base or liner under restorations. The viscosity allows placement without running or slumping, and it adapts readily to cavity walls and flows into narrow areas and undercuts. The composite is fairly translucent and blends imperceptibly with enamel. In cases where no occlusal adjustment or finishing is needed, the surface of *CLEARFIL MAJESTY ES Flow* can be wiped with alcohol rather than polishing with rotary instruments.



Bulk-fill Composite: *Comparing differences*

Direct posterior composites are among the most performed restorative treatments in dentistry; however, placement can be challenging and time-consuming. To save time and deliver predictable posterior restorations, manufacturers developed bulk-fill composites. Where once it was required to cure composites in increments of 2 mm, newer bulk-fill products can be cured up to 4-6 mm, while decreasing shrinkage stresses generated during polymerization. The quicker placement of these materials has made them quite popular; and with the availability of long-term clinical data, clinicians are becoming more confident in their use.



Advantages: *less technique sensitivity, reduced chair time, fewer voids.*



Disadvantages: *esthetics (sometimes too translucent), limited choice of shades.*

Understanding the Differences: Types of Bulk-fill Composites

Bulk-fill composites are not all the same. It is important to understand how they differ and to use them accordingly. The main difference among bulk-fill composites can be seen in the viscosity of the material and its delivery.

BEAUTIFIL-Bulk Flowable (SHOFU DENTAL CORP.)

Filtek Bulk Fill Flowable Restorative (3M)

SureFil SDR *flow+* (DENTSPLY Sirona)

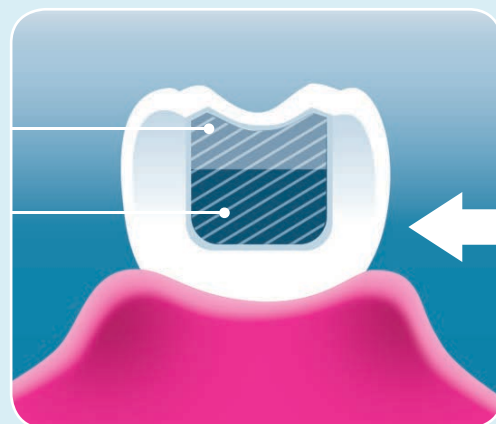
Venus Bulk Fill (Kulzer)

x-tra Base (VOCO)

Bulk-fill Flowable (Base)

Cap off with
Universal
Composite

4mm
increment
(base)



SureFil® SDR *flow+* DENTSPLY Sirona

SDR Flow was the first self-leveling, flowable bulk fill base composite.

SDR flow+ is a modification on the original **SDR flow**.

SDR flow+ has now been approved for use in several indications (including base in cavity

Class I and II direct restorations, liner under direct restorative materials, Class II box liner, sealant, conservative Class I restorations, core buildup, Class III and V restorations). **SDR flow** was originally evaluated in April 2010, and received our highest rating of 5 +, Editor's Choice. Consultants especially liked the self-leveling nature of the product and its adaptation to cavity walls.



BEAUTIFIL BulkFill Flow SHOFU DENTAL CORP.

BEAUTIFIL-Bulk Flowable

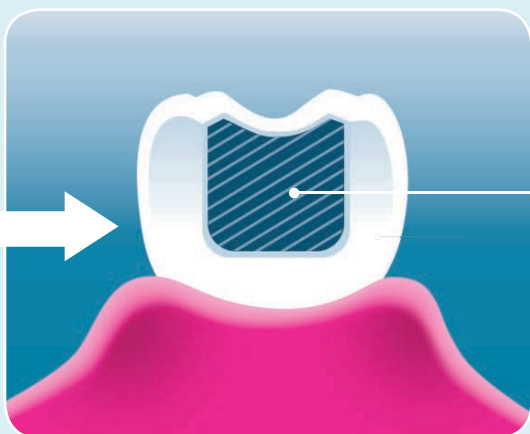
is a low-viscosity, bulk-fill composite indicated for use as a base in composite restorations. It offers continuous fluoride release and rechargeability and low shrinkage stress. The material adapts well to cavity walls and self-levels on the surface. The 4 mm depth of cure allows efficient filling of deep areas without air bubbles or voids. This high-viscosity **bulk** flowable is easiest to extrude through the large gauge tips included. Consultants appreciated the fluoride release as a positive feature, especially when used to fill cervical areas.



Ideal Characteristics of Bulk-fill Composites:

- Increased Depth of Cure (≥ 4 mm)
- Lower Polymerization Shrinkage
- Acceptable Esthetics (Posterior Use)
- Increased Wear Resistance
- Good Handling and Adaptability

Bulk-fill Restorative



Can use bulk fill to occlusal surface in 4-5mm increments

Coming soon: Filtek ONE (3M)

3M™ Filtek™ One Bulk Fill Restorative is a simple one-step placement restorative material. Designed for the posterior, its unique optical properties and increased opacity allow for the simplicity of one-step placement without compromising esthetic results. With excellent adaptation and handling, it can be placed in one fast, easy increment up to 5 mm—no need for layering or expensive dispensing devices. 3M's true nanotechnology results in superior wear resistance and excellent polish retention. Available in five shades, **Filtek One Bulk Fill Restorative** enhances the 3M lineup of composites by improving the esthetic properties of a one-step placement material.



Admira Fusion xtra Bulk Fill (VOCO)

Aura Bulk Fill (SDI North America Inc.)

BEAUTIFIL Bulk Restorative (SHOFU Dental Corporation)

Filtek Bulk Fill Posterior Restorative (3M)

Sonicfill II (Kerr Restorative)

Tetric EvoCeram Bulk Fill (Ivoclar Vivadent, Inc.)

x-tra fil (VOCO)

BulkeZ Bulk Fill

Danville Materials

With **BulkeZ**, Danville has reinvented bulk-fill composites by addressing the limitations in bulk fills that plague current products, such as gap formation and stress from rapid curing. It is an easy-to-place, dual-cure composite that combines flowable cavity adaptation with high strength and wear resistance—all in one, simple step. Its self-cure, patent-pending IntelliTek Technology is designed to specifically control and direct shrinkage while eliminating leakage in all posterior restorations. Additionally, **BulkeZ** provides unlimited depth of cure, and utilizes a unique curing mechanism that is highly color stable and compatible with all bonding agents. **BulkeZ** is available in Vita shades A1, A2, and A3.



Tetric EvoCeram Bulk Fill

Tetric EvoFlow Bulk Fill Ivoclar Vivadent

Tetric EvoFlow Bulk Fill and **Tetric EvoCeram Bulk Fill** represent a further developed version of the proven **Tetric EvoCeram**. Both products can be used together and applied in layers of up to 4 mm, depending on technique desired.

Tetric EvoFlow Bulk Fill is a self-leveling, flowable, bulk fill composite, which can be capped with **Tetric EvoCeram Bulk Fill** or any universal composite. **Tetric EvoFlow Bulk**

Fill has low translucency, making it excellent for masking dentin. If a one-step procedure is desired, **Tetric EvoCeram Bulk Fill** can be utilized alone with no additional capping layer required. Due to the Aessencio technology and the patented light initiator called Ivocerin the product combines efficiency and esthetics in a very special way requiring only a 10 sec cure.



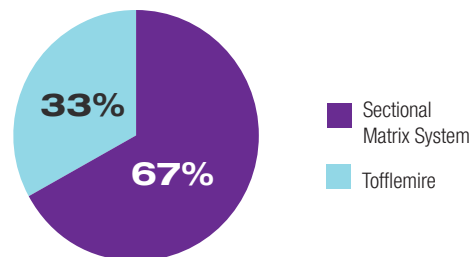
Posterior Composites: *Sectional Matrix Systems*

Posterior Composites: Sectional Matrix Systems

Successful class II restorations require clinicians to utilize a matrix system to recreate missing proximal tooth structure. The goal is to create an ideal contact with the adjacent tooth, restore optimal interproximal contour, and minimize time spent finishing and polishing.

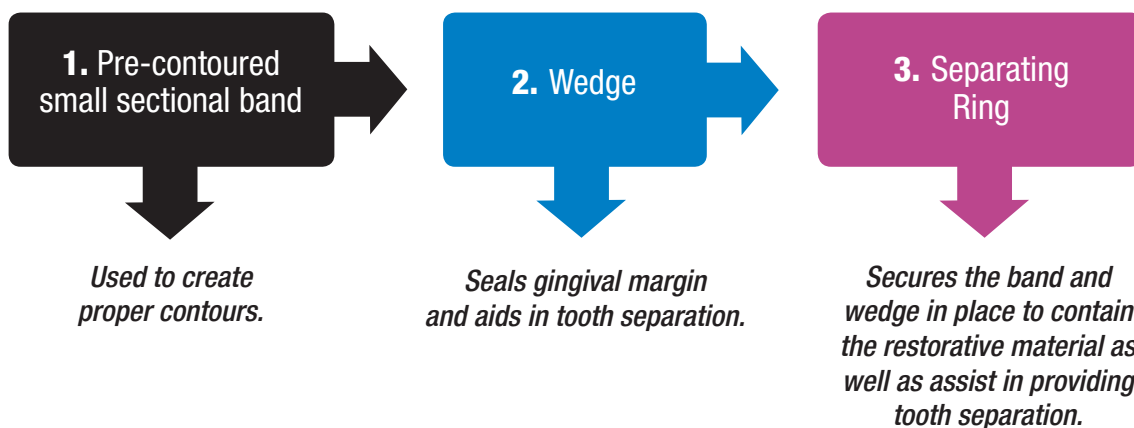
Restoring class II restorations with amalgam requires circumferential bands/retainer matrix systems. Due to its plasticity, amalgam can be condensed into the proximal cavity, resulting in tight interproximal contacts. Resins cannot be compressed against the matrix band as well as amalgams can, and when used in conjunction with conventional matrix systems, a tight contact is not always consistently achievable. Manufacturers have developed sectional matrix systems, such as **Composi-Tight 3D™** (Garrison Dental Solutions) and the **Palodent Plus** (DENTSPLY Sirona). These easy to use systems utilize three components, allowing clinicians to predictably and efficiently create interproximal contacts.

Survey of Clinical Consultants:
What are you using for class II restorations?



Some dentists still prefer using a Tofflemire style matrix system for their posterior composites, and clinicians who prefer sectional matrix systems will keep Tofflemire systems in the office for certain indications. **PinkBand® Silicone Coated Dental Matrix Bands** (Pink Band) and **Greater Curve** (Greater Curve).

Sectional Matrix Systems require the use of three components:



Composi-Tight 3D XR

Garrison Dental Solutions

Awarded Top Sectional Matrix system for the 5th year in a row, **Composi-Tight 3D XR** Sectional Matrix System is designed to create tight, anatomical contacts on Class II composite restorations. The rings in the **3D XR system** are produced with **Soft Face™** silicone to enhance matrix band adaptation and improve contacts, reducing flash and finishing time. **Composi-Tight 3D XR** and 3D Rings are angled to allow stackability in any combination for MOD and multiple-tooth restorations. Consultants continue to rate this system highly due to the contacts obtained, the reduction of flash, and retentiveness of the silicone rings.



Palodent Plus *DENTSPLY Sirona*

Palodent Plus offers wide applications for sectional matrix system use and delivers predictable, accurate contacts consistently. The system includes a molar and pre-molar ring, 5 different size matrices and wedges, and **WedgeGuards**. The rings offer consistent separation force and are made of Nickel Titanium which ensures they will last longer than traditional stainless steel rings. The tines on the rings help to provide excellent retention on the tooth and the system seals the restoration to minimize the amount of finishing required.



Anterior Composites: *Aids/Instruments*

Anterior Composites:

Achieving esthetic outcomes for direct composite veneers can be a daunting process. Some clinicians stay away from the conservative restorative option because of the difficulty in creating ideal contours and the amount of time that goes into layering, shade selection, and finishing/polishing of the final restoration. To assist clinicians with this procedure, templates and prefabricated direct composite veneers systems are available. Composite veneer kits which have prefabricated composite veneers such as *Visalys Veneer* (Kettenbach) and *Componeer* (Coltene) assist in the process, providing all items needed to bond and reduce excess flash. Another recommended kit is *Uveneer* (Ultradent), which is an easy-to-use translucent template system that allows clinicians to utilize any composite material.

Clinical Problem Solver: OptraSculpt Pad (*Ivoclar Vivadent*)

The *OptraSculpt Pad* is an instrument with non-stick foam pad attachments used to place and contour composites, particularly Class III, IV, or V restorations. I personally like the *OptraSculpt Pad*, because I can spread the composite on the tooth easily without it adhering to the instrument, and it creates a smooth surface. I have also found the *OptraSculpt Pad* useful to hold veneers in place during cementation. The kit comes with two sized pads (4 mm and 6 mm) that can be inserted into a handle. Definitely a must-have product!



What's New In the Evolution of Composite Technology? *Strength through Nanofiber Innovation*

The newly released *NovaPro™ Flow* and *Fill* composites from Nanova Biomaterials, Inc. have superior performance due to the incorporation of calcium phosphate nanofibers in conjunction with nanoparticle technology. This combination significantly improves the mechanical performance, bruxing durability, and longevity of restorative composites used today. *NovaPro™* composites are the first and only composites to add this patent pending nanofiber technology to the current nano-hybrid composites on the market.

By utilizing nanofibers with nanoparticles, the material is reinforced, providing a stronger, longer lasting composite with excellent esthetic effects and lower shrinkage stress. Nanova's nano-hybrid technology is best described as having a box of basketballs, tennis balls, golf balls, and marbles (nano) to achieve a higher fill percentage, thus improving the strength of the structure.

Nanova developed and manufactured this revolutionary nanofiber technology used in both their flowable and universal composite at their Columbia, Missouri headquarters. These single crystal nanofibers are under 100 nanometers in diameter, which is approximately 1,000 times smaller than hair. The single crystal form gives the fibers their strength by reducing the possibility of defects in a cross-section.



Q&A: BEAUTIFIL II Gingiva Shades (SHOFU DENTAL CORP.)

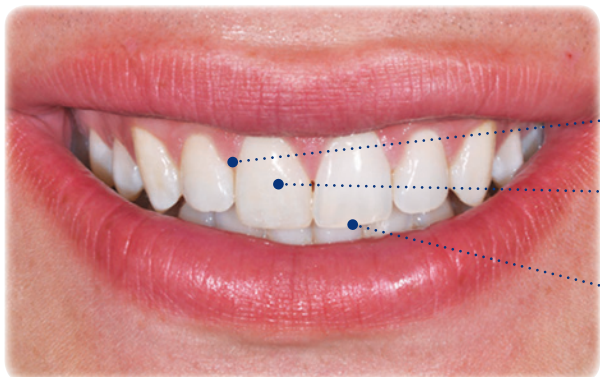
Q: Is there a product or technique that can mimic or help disguise lost gingival tissue due to recession?

A: Yes, *Beautiful II Gingiva* is intended for the cervical area, specifically—the esthetic correction of gingival recession, wedge-shaped defects, exposed roots, splinting, and re-balancing of pink and white esthetics. *Beautiful II Gingiva* provides additional shades to the award-winning *Beautiful II*, a fluoride-releasing, bioactive, nano-hybrid composite available in dentin shades. Available in 5 shades, *Beautiful II Gingiva* composite can be blended and layered to produce custom shades that will help effectively address patient's clinical needs. Indications of this novel gingiva-colored composite are not limited to defects in the cervical area of a tooth. *Beautiful II Gingiva* can be utilized chairside to camouflage the exposed implant abutments and crown and bridge margins, to repair and re-contour the gingival portion of indirect restorations, to modify the aesthetics of provisional restorations and to improve soft-tissue appearance in denture patients by revitalizing a worn or fractured denture.



Composite Finishing & Polishing Systems

Composite finishing and polishing kits are available in diamond and aluminum oxide single-step and two-step systems. One-step systems are faster and more convenient; however, two-step systems provide a higher polish. These systems can be single-use (disposable) or multi-use (autoclavable) and are available in both aluminium oxide and diamond abrasives.



Benefits of proper finishing vs. polishing

Smooth surfaces **resist bacterial adhesion** and plaque build-up.

Creates a **light-reflective surface**, enhancing the optical properties of the restoration.

Smooth surfaces **resist corrosion** and **decrease wear rates**. The rate of wear on composite resin and tooth structure opposing ceramic restorations is reduced with a proper finishing and polishing process.

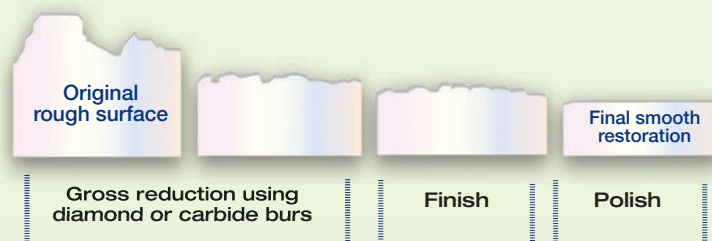
Finishing vs. Polishing

Finishing and polishing tooth structures and restorative materials not only improve esthetics but also improve soft tissue health and increase the longevity of various restorative materials. While finishing and polishing are used synonymously, they are two separate steps with different desired outcomes. Finishing generally refers to using abrasives to achieve the final contour and occlusion of restorations, and polishing refers to the process of obtaining a smooth final surface.

FINISHING refers to gross contouring of restorations to obtain the desired contour and appropriate occlusion.

POLISHING removes the finest surface scratches/imperfections using mild abrasives to produce a smooth, shiny surface.

Step-down approach to finishing & polishing



Sof-Lex Diamond Polishing System

3M™ Sof-Lex™ Diamond Polishing System is a two-step system that imparts a gorgeous diamond paste-like gloss in the convenience of a rubberized system. The system contains two spirals: The **Sof-Lex Pre-Polishing Spiral** (beige) smooths and removes scratches in restorations that develop during contouring and prepares the surface for final polishing. The **Sof-Lex Diamond Polishing Spiral** (pink) is embedded with diamond particles to deliver a gorgeous paste-like gloss. The flexible spirals adapt to all tooth surfaces—anterior and posterior, convex and concave and can be used from any angle. As an economical choice, the spirals can also be sterilized and reused.



SuperSnap X-Treme

SHOFU DENTAL CORP.

Super-Snap X-Treme is a 2-step polishing system with aluminum oxide grit embedded in each disk. The red disk has a new 3-D semispherical grit coating designed to create space for ground debris and to discharge that debris during polishing, resulting in a smoother finish with less heat production.

Super-Snap X-Treme produces a smooth, high-gloss finish to composite restorations, and is ideal for polishing broad, flat areas such as anterior teeth.

Super-Snap X-Treme was tested in our biomaterial laboratory, producing higher gloss measurements when compared with other systems.



LED Curing Lights

Surveys of dental offices have shown that many light-curing units do not deliver their intended light output. Improper use of a curing light can result in inadequate curing of the composite and inadequate physical and mechanical properties. These outcomes may be common reasons for restoration failure that include: bulk fracture of the composite, secondary caries due to adhesive failure between the tooth and composite, and breakdown of the margin at the gingival portion of the proximal box. Arbitrarily increasing light exposure times in an effort to prevent under-curing is not the answer, as this may cause unacceptable thermal trauma to the pulp and surrounding tissues.

DESIRABLE PROPERTIES:

LED curing lights

Compatible with variety of initiators (3rd-generation)

1

Light tip 8-10 mm in diameter and probe long enough (> 7 cm) to reach posterior surfaces

2

Battery holds a charge for several hours of use, or can be quickly recharged - extra battery provided and has a low battery warning

3

Good ergonomics – portable, lightweight, easily accessible controls, and stable docking station/stand

4

Digital readout clearly displayed

5

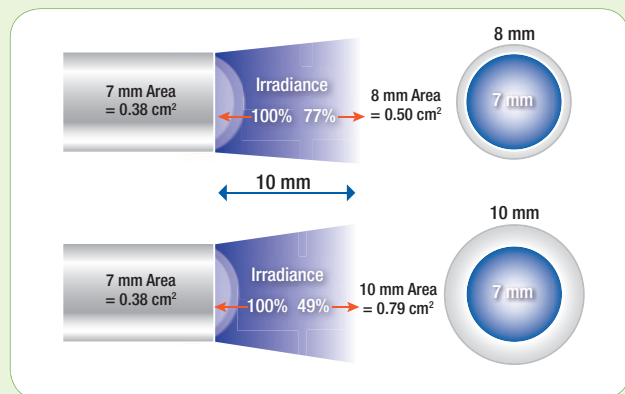
Easy to disinfect with autoclavable light tip or protective barrier

6

Effect of Distance on Irradiance

For some curing lights, even a small distance of 5 mm between the curing light and the resin can have a large negative effect on the irradiance received by the resin. Look for a curing light that emits a well-collimated light beam with minimal reduction in the irradiance at distances up to 10 mm away from the tip. A small increase in beam divergence causes a large increase in beam area which in turn produces a lower irradiance.

Effect of Light Beam Divergence on Area.



Elipar DeepCure-S 3M

Elipar DeepCure-S provides confidence of a complete cure due to optimized optics. This new innovation ensures practitioners will have a deep, uniform cure even when perfect light positioning is difficult.

Improved ease of use and durability features include:

- 1,470 mW/cm² Intensity spread evenly throughout 10mm tip diameter
- Black coating of light guide reduces stray light
- Radiometer on charging base
- Light guide tip height reduced to ease access to posterior restorations
- One-piece stainless steel housing
- One second tack cure feature



Translux Wave Kulzer

The **Translux Wave** is a new state-of-the-art curing light that delivers optimum polymerization for all common camphorquinone-based dental materials. Its lightweight, cordless and its ergonomic design provide a safe and easy method for consistent light-curing. Features include:

- Pen-style body in a lightweight and ergonomic pen-style design
- One-button operation
- Cordless design for maximum freedom of movement
- Reliable performance and built-in radiometer



Sonic Nitrile Powder Free Examination Gloves

++++ 1/2

91%
overall
rating

Aurelia

www.aureliagloves.com

Description

Sonic Nitrile Powder Free Examination Gloves are non-sterile, single-use disposable ambidextrous gloves. The gloves are 100% nitrile, latex-free and powder-free, 2.2 mil thick, and feature a beaded cuff. **Sonic Nitrile Powder Free Examination Gloves** are available in an indigo color in boxes of 300 in extra small, small, medium or large sizes, and in an extra-large size in boxes of 270. They are supplied in cases of 10 boxes.

Indications

Nonsurgical patient procedures.

Unique Features

- The body of the glove and its fingers are textured.
- Automated packing to enhance single glove dispensing.

Consultants' Comments

- "They fit very well, good cuff length, and I love the color."
- "My skin felt smoother and healthier using these gloves."
- "If you like a very form fitted glove, these are great."
- "This is the first non-latex glove I've liked."
- "The ability to hold instruments without them slipping was great."
- "Tactile sensitivity was fantastic, it was as if I was not wearing gloves."
- "Last a long time during procedures."
- "I experienced no hand fatigues, and they didn't grip the palm of your hand too tightly."

Clinical Tips

- Try a couple of sizes to see which is the most comfortable.
- Be gentle when pulling them on.
- Keep the fingers of the gloves as dry as possible.

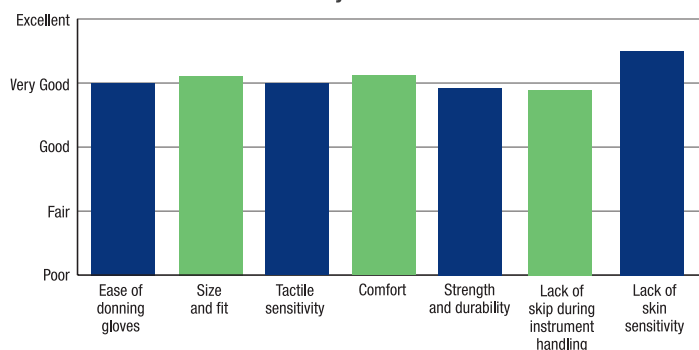


Evaluation Highlights

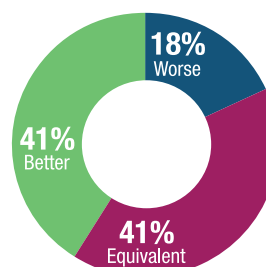
Sonic Nitrile Powder Free Examination Gloves were evaluated by 39 consultants with an average of 70 uses per consultant.

- Comfortable.
- Flexible and elastic for comfort.
- Good fit and availability of sizes.
- Durable and resistant to tearing.
- Good tactile sensitivity.
- Great color.

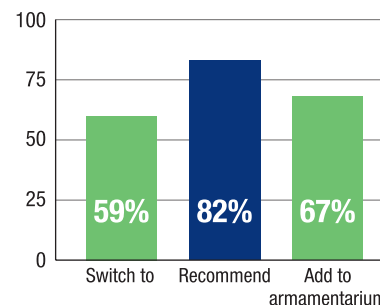
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Tornado LK

++++ 1/2

91%
overall
rating

Bien-Air USA Inc.

www.bienair.com

Description

Tornado LK is an air-driven, high-speed handpiece with an built-in LED light. The turbine contains ceramic bearings, extending the life of the turbine and reducing the noise level during use. The small head results in improved access and is sealed to help prevent contamination and increase bearing durability. **Tornado LK** has a four-port symmetrical water spray, a non-slip scratch-resistant coating, and weighs just 58 grams. It operates at 30 Watts and 55 dB and is attached to the lines using a multiflex, Kavo-style coupler, and is available to fit Bien-Air style couplers. **Tornado LK** comes with up to a 3-year warranty.

Indications

Procedures requiring use of a high-speed handpiece.

Unique Features

Tornado LK is designed with SteadyTorque technology, delivering a power output of 30 watts, due to the engineering of the rotor's micron-precise shape and configuration, coupled with optimal air pressure distribution and exhaust flow. It also features *Accu-Chuck PreciPlus*, a vibration-canceling bur-retention mechanism, allowing for easy bur-release and removal, and ultra-quiet operation. Lastly, it features *Cool Touch*, a patented anti-heating feature designed to maintain the instrument's head at a safe temperature, thus significantly decreasing patient burn injuries.

Consultants' Comments

- "Really good power and torque."
- "Quieter than my usual handpieces."
- "Performed well during the two-month test period."
- "The **Tornado LK** is a workhorse."

Clinical Tips

- Make sure suction is adequate - the water spray is heavy.
- Take care when removing burs; sometimes they are a little difficult to remove.

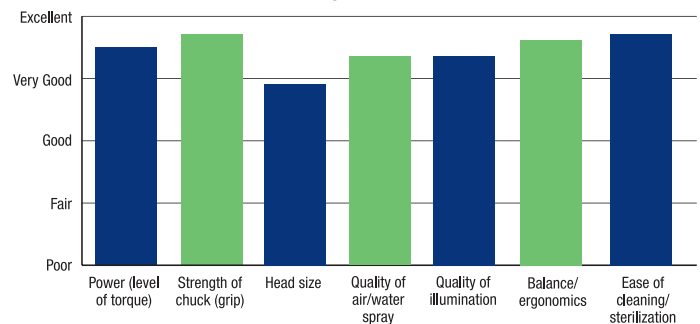


Evaluation Highlights

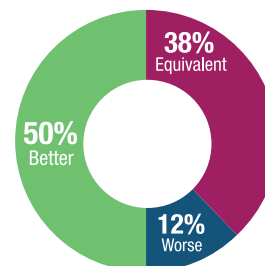
Tornado LK was evaluated by 8 consultants, with an average 26 uses per consultant.

- Easy to use.
- Very efficient cutting.
- Chuck firmly grips the bur.
- Good illumination and a wide field of view.
- Quiet when running.
- Minimal vibration.

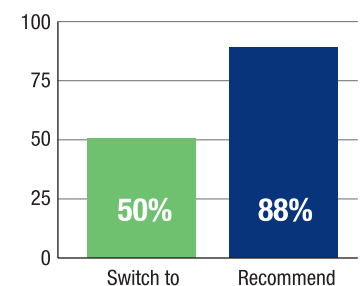
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Fusion 5 Curing Light

++++ 1/2

DentLight
www.dentlight.com

91%
overall
rating

Description

Fusion 5 Curing Light is an advanced high-powered cordless curing light that offers a uniform, laser-sharp focused beam and low heat output. The curing light operates at a wavelength of 415-490 nm, giving it the ability to cure all materials, and includes four optional light heads with wavelengths of 385-490 nm, 415 nm, 630 nm, and 420-620 nm. In *Plasma Power Mode*, it offers a rapid three-second cure up to a depth of 10 mm. The digital timer has 3-, 5-, 10-, 20- and 60-second settings. **Fusion 5 Curing Light** has a slim handpiece constructed of anodized aircraft aluminum for superior durability and ease of handling weighing 3.9 oz. It integrates with an LCD metal keypad interface and can be charged using the docking station or direct plug-in. Charging takes 90 minutes, and the battery runs 1400 3-second cures. **Fusion 5 Curing Light** comes with one LED light head, the main control, three curing caps (3 mm-tacking, 9 mm and 13 mm), a light shield, battery assembly, charging stand, power adaptor, stand stick pad, pack of 100 barrier sleeves, and the manufacturer's instructions for use.

Indications

- Curing of all direct composite materials.
- Curing of other dental materials.

Unique Features

- **Fusion 5 Curing Light** can be used in pulsed mode if desired, further reducing heat generation.
- **Fusion 5 Curing Light** can be upgraded with optional add-ons that provide additional functions including transillumination for the detection of caries, fractures and canals, fluorescent imaging for oral lesion detection, and an option for photodynamic pain therapy.

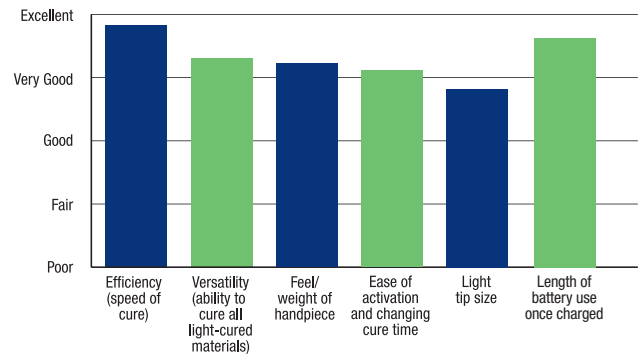


Evaluation Highlights

Fusion 5 Curing Light was evaluated by 13 consultants with an average of 85 uses per consultant.

- Cordless.
- Reliable, fast cure.
- Customizable curing times.
- Lightweight.
- Comfortable for patients.
- Compact recharging unit.
- Versatile and able to cure most light-cured dental materials.

Key Features:



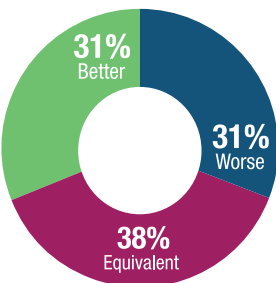
Consultants' Comments

- "Great curing light and its low weight is impressive."
- "Convenient cordless feature."
- "I liked the ability to customize the curing time and curing light intensity."
- "The shape of the light makes it very easy to use, even interproximally."
- "Buy this light!"
- "Angulation and reaching the molars was awkward; otherwise, I loved this curing light."
- "Would prefer that the lenses be sealed to eliminate the chance of contamination."

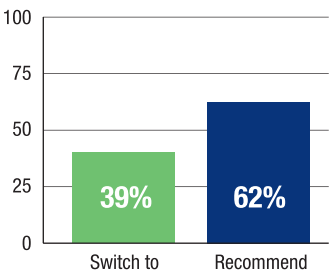
Clinical Tips

- Make sure the orange shield is locked on securely.
- Cure the posterior teeth from the occlusal surface.
- The 3-second cure time is great when placing sealants for children.
- Make sure the tip is perfectly aligned for the 3 seconds to get a high power, 3-second cure.
- Mount the charging base on the top so that you can pick it up with one hand.
- Use the clear plastic barrier sleeve. It prevents cross contamination and doesn't affect curing.

Compared to Competitive Products:



Percentage of Consultants Who Would:



Sanctuary Dental Dam Punch

+++++

Sanctuary Health
www.sanctuary-dental.com

96%
overall
rating

Description

Sanctuary Dental Dam Punch is made of work-hardened, 304 stainless steel for strength. It is light-weight, has seven hole sizes that are adjusted into position using a dial, and has a matte finish. The punch provides a clean cut and is easy to remove after punching the hole.

Indications

Punching rubber dam holes when procedures require use of a rubber dam.

Consultants' Comments

- "Very easy to use."
- "This punch makes excellent clean cuts in a variety of sizes."
- "I really liked it - I hadn't thought a rubber dam punch could be improved on until now."
- "Nice matte finish - it did help reduce eye fatigue."
- "The dial is reliable and always locks into place when you have selected the required size."
- "The distance from the hole punch to the handle lever made it impossible to punch near the center of the rubber dam if it was pre-framed."
- "Occasionally it opened wider than I needed and I had to close it a bit before using it."

Clinical Tips

- Ensure that all rubber dam remnants are removed prior to autoclaving the punch.
- Punch larger holes than you think you need.

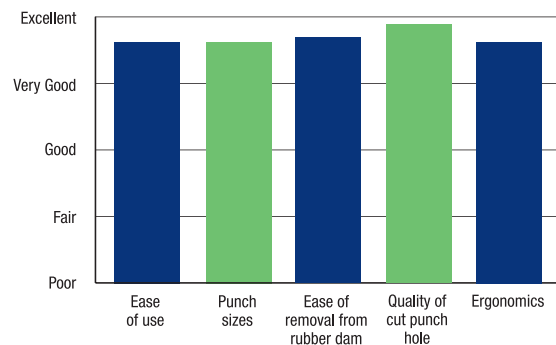


Evaluation Highlights

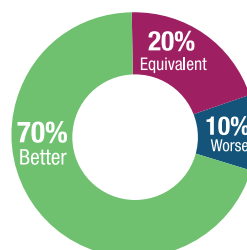
Sanctuary Dental Dam Punch was evaluated by 20 consultants, with an average of 25 uses per consultant.

- Easy to use.
- Lightweight.
- Predictable, reliable and consistent.
- Good selection of punch hole sizes, including larger diameter ones.
- Dial swivels smoothly and locks into position when you are ready.
- Consistent quality of cut for punch holes.
- Ergonomic.

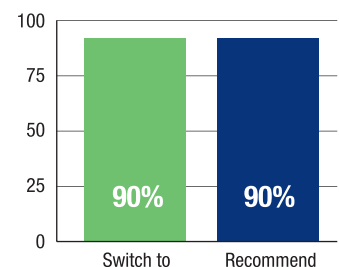
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Sanctuary Dental Dam Clamp Kit



Sanctuary Health
www.sanctuary-dental.com



96%
overall
rating

Description

Sanctuary Dental Dam Clamp Kit consists of an organizer stand and dental dam clamps. The organizer has posts over which the dental dam clamps are stacked, with one post for each of nine clamp sizes. The clamps are fabricated using 465 stainless steel for strength and flexibility, helping to ensure that the clamp retains its original shape with repeated use. Clamp forceps can be placed over the clamp while it is on the post, making its removal from the post and placement easy. Both the dental dam clamps and the organizer stand are autoclavable.

Indications

- Procedures requiring use of a rubber dam clamp.



Evaluation Highlights

Sanctuary Dental Dam Clamp Kit was evaluated by 24 consultants, with an average of 18 uses per consultant.

- Easy and efficient clamp organization.
- Variety of clamp sizes and each size can be stacked on the organizer.
- Convenient level of rigidity for the clamps.
- Clamps fit well, securely grip on teeth and retain shape after use.
- Easy placement and removal of clamps.
- In addition to the clamps, the clamp organizer is autoclavable.

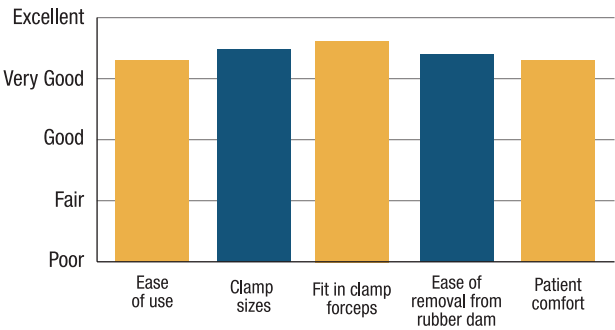
Consultants' Comments

- "Great organizer stand and set-up, making it easy to pick the right clamp."
- "This kit would be great for restorative dentistry."
- "The ability to stack clamps is handy, and the ability to autoclave is also beneficial."
- "I liked the matte finish."
- "This product is made of quality materials and works well."
- "Very nicely laid out with a variety of useful sizes to fit most situations."
- "Great product."
- "I would switch to this system because of the furrow on each clamp and the organizer stand."
- "Did not pop off at all. Great for Class I restorations and endodontic cases."
- "The wings and clamp size made dental dam application more cumbersome than usual."
- "I would like to see a smaller organizer that took 2 to 4 clamp sizes, and more pado-sized clamps."
- "Notations/color-coding on the stand for the different clamp sizes would be good."

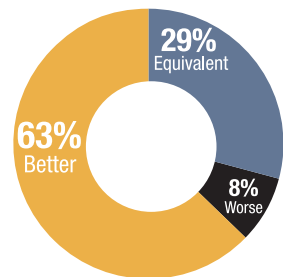
Clinical Tips

- The clamp's low-profile back spring makes it easy to simultaneously use opposing upper and lower clamps.
- The channels/furrows on the wings facilitate release of the rubber dam with an instrument.

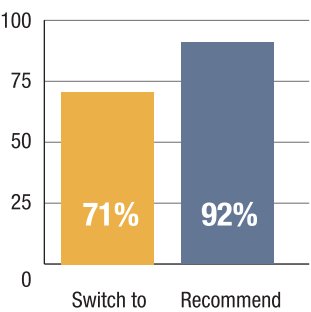
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



3M™ RelyX™ Unicem Self-Adhesive Resin Cement

(15-YEAR CLINICAL PERFORMANCE)



3M
www.3M.com

96%
rating at
recall

Description:

RelyX Unicem Self-Adhesive Resin

Cement/RelyX U200 is dual-cured and does not require separate etching, priming or bonding. The cement is filled 72% by weight and contains fluoride. **RelyX Unicem** is available in capsules in shades A1, A2, A3 Opaque, White Opaque, and Translucent. **RelyX Unicem 2** is available in a paste/paste formulation delivered via a *Clicker* or an automix syringe. The manufacturer claims that **RelyX Unicem 2** provides an excellent marginal seal. Both formulations are indicated for the cementation of composite crowns, bridges, inlays and onlays, PFM and metal restorations, implant abutments and endodontic posts.

Clinical Evaluation Protocol:

More than 6000 restorations have been cemented with **RelyX Unicem** and **RelyX Unicem 2** over the past 15 years. Close to 3400 were recalled at about 15 years. The restorations include ceramic inlays, onlays, crowns and bridges as well as zirconia crowns and bridges and endodontic posts (Figure 1). Approximately 2/3 (2226) of the recalled restorations were cemented with **RelyX Unicem**, whereas 1/3 (1166) were cemented with **RelyX Unicem 2**. The age of the restorations recalled ranged from 5 to 15 years (Figure 2). Twenty-seven percent of these restorations were cemented with **RelyX Unicem 2** and 73% were cemented with **RelyX Unicem**.

Lack of Marginal Discoloration

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

Retention

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

Consultants' Comments:

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

Results at 15 years:

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



Lack of Post-operative Sensitivity

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

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

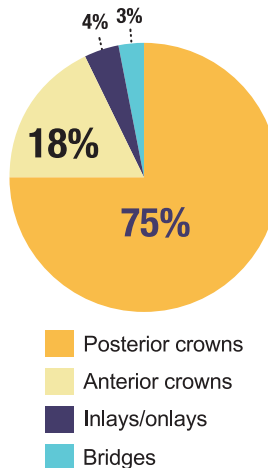


Fig. 2: Age of restorations cemented with 3M™ RelyX™ Unicem and 3M™ RelyX™ Unicem 2 evaluated at recall.

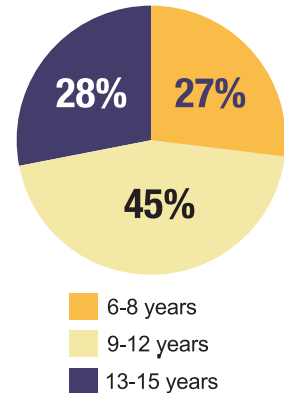
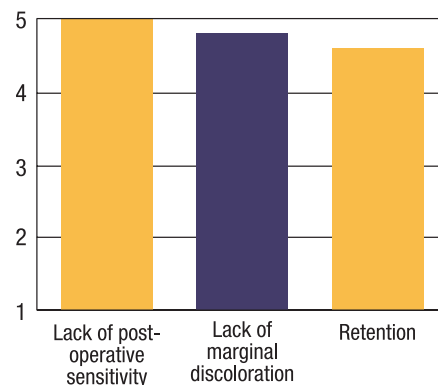


Fig. 3: Results of 15-year recall of restorations cemented with 3M™ RelyX™ Unicem.



Summary:

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

BruxZir Solid Zirconia Crowns and Bridges

(5-YEAR CLINICAL PERFORMANCE)



Glidewell Laboratories

www.glidewell dental.com

97%
rating at
recall

Description:

A total of 2112 **BruxZir Solid Zirconia Crowns and Bridges**, a full-contour monolithic zirconia, have been placed and monitored over the past five and a half years. The restorations included single crowns and three-, four-, five- and six-unit bridges (Figure 1). Among the bridges, 69% were three units, 17% were four units, 8% were five units, and 6% were six units. The restorations were cemented with adhesive and self-adhesive resin cements.

Clinical Evaluation Protocol:

Over a six-month period, 1265 **BruxZir Solid Zirconia Crowns and Bridges** restorations were recalled out of 2112 total restorations placed. Among the recalled restorations, 49% had been in function for up to three years, 28% up to five years and 23% for over five years (Figure 2). The majority (81%) of restorations were fabricated by Glidewell Laboratories, while the remainder (19%) were fabricated by Apex Dental Milling.

Fig 1. Distribution of **BruxZir Solid Zirconia Crowns and Bridges** restorations at recall.

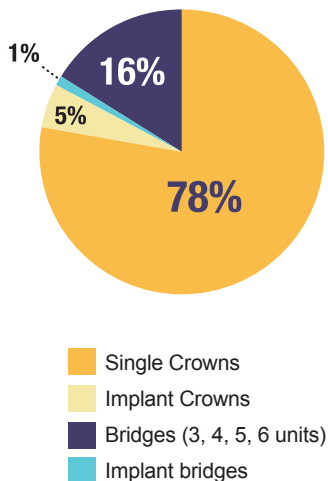
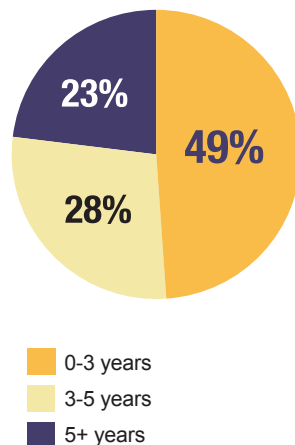


Fig 2: Age of **BruxZir Solid Zirconia Crowns and Bridges** restorations at recall.



BruxZir Bridge 13-15

Results at 3 years:

BruxZir Solid Zirconia Crowns and Bridges restorations were evaluated in the following categories: esthetics, resistance to fracture/chipping, resistance to marginal discoloration, wear resistance of the zirconia restoration and opposing dentition, and retention. The restorations were evaluated on a 1-5 rating scale: 1= poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Consultants' Comments

- "Excellent fit and esthetics - exceptional for posterior crowns."
- "One of the nicest implant crowns I have seen - opaque enough to mask the metal abutment."
- "**BruxZir** is a great choice for worry-free crowns and a good value."
- "**BruxZir** is my go to restoration for posterior teeth - looks good and guaranteed to last."
- "I have been using **BruxZir** for six years and have not been disappointed. Neither have my patients."

Esthetics

The esthetics of **BruxZir Solid Zirconia Crowns and Bridges** restorations was rated excellent (Figure 3) based on the consistency of the shades and in comparison to other monolithic zirconia restorations. Zirconia restorations are generally opaque and lack translucency and opalescence. **BruxZir Anterior** is definitely more translucent and still has high flexural strength. The esthetics of zirconia restorations is not comparable to esthetic ceramic restorations resulting from incremental buildup but it is improving. **BruxZir Solid Zirconia Crowns and Bridges** restorations are perfect for patients desiring more uniform, whiter teeth (B1 shade). The new **BruxZir 16** recently introduced by Glidewell Laboratories has improved esthetics.

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

BruxZir Solid Zirconia Crowns and Bridges (continued)

Resistance to Fracture/Chipping

Chipping and fracture of **BruxZir Solid Zirconia Crowns and Bridges** restorations has been practically non-existent (Figure 3). Only three fractures have been observed. A 2nd molar crown fractured; it was likely the result of insufficient occlusal clearance and reduction. Two implant crowns on lower second molars also fractured and were replaced. Their fracture was probably the result of very low clearance and insufficient space due to implant placement. Having less than 1 mm clearance is not recommended for molars, especially second molars. None of the three- or four-unit bridges fractured. Two five-unit bridges fractured and were replaced with PFM bridges. In both cases, the clearance was minimal and the patients were heavy bruxers. Two six-unit anterior bridges were splinted teeth where not more than one or two adjacent teeth were missing.

Resistance to Marginal Discoloration

Only six (0.5%) of the **BruxZir Solid Zirconia Crowns and Bridges** restorations exhibited slight marginal discoloration at three to five years or more (Figure 3). The opacity of the crowns helps camouflage most staining or microleakage. Staining is more a function of the bonding agent and the cement used rather than the zirconia. If teeth are very discolored, it is advisable to use a more opaque resin for cementation.

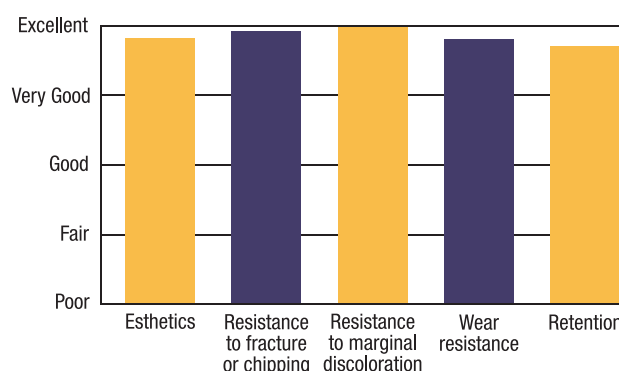
Wear Resistance

Almost no wear was observed on **BruxZir Solid Zirconia Crowns and Bridges** restorations and minimal wear was observed on opposing natural dentition at three to five years (Figure 3). More wear was noted on gold crowns opposing **BruxZir Solid Zirconia Crowns and Bridges** restorations.

Retention

Sixty-three (3%) out of the 2112 **BruxZir Solid Zirconia Crowns and Bridges** placed debonded and required re-cementation over the five-year period (Figure 3). This debonding rate is slightly higher when compared to debonding of non-zirconia crowns (2%) that THE DENTAL ADVISOR has documented over time. It is advisable to prime zirconia crowns prior to cementation to improve retention.

Fig. 3: Results of *BruxZir Solid Zirconia Crowns and Bridges* restorations at five years.



Conclusions

Over the five-year evaluation period, **BruxZir Solid Zirconia Crowns and Bridges** has proven to be an excellent restoration with respect to esthetics and dependability. It is highly recommended for posterior crowns and three- and four-unit bridges as well as implant-supported crowns and bridges. In select cases, it can be used confidently for anterior restorations. It received a 97% clinical rating.

THE DENTAL ADVISOR SPEAKER'S BUREAU



UPCOMING LECTURES

■ **FRIDAY, APRIL 24, 2017:** Dr. Fiona Collins

ELECTRONIC CIGARETTES, HOOKAHS & OTHER ALTERNATIVES: FACT & FICTION

WOLVERINE DENTAL SOCIETY, GROSSE POINTE, MI



■ **FRIDAY, APRIL 26, 2017:** THE DENTAL ADVISOR Staff
TOLEDO DENTAL SOCIETY SPRING CLINIC, TOLEDO, OH:

- **DENTAL UNIT WATERLINES: FACTS VS. MYTHS** – Peri Nelson
- **DEMYSTIFYING DENTIFRICES** – Dr. Fiona Collins
- **JAZZING UP YOUR DAY: MAINTAINING MOTIVATION IN CLINICAL PRACTICE – AN INTERACTIVE WORKSHOP** – Mary Yakas and Carol Reed
- **INFECTION CONTROL AND OSHA** – Peri Nelson and Dr. Fiona Collins



■ **FRIDAY, MAY 3, 2017:** Dr. Sabiha Bunek

AWARD WINNING PRODUCTS & CLINICAL PROBLEM SOLVERS

WASHTENAW DISTRICT DENTAL SOCIETY, ANN ARBOR, MI



To schedule THE DENTAL ADVISOR to speak to your group, please contact Mary Yakas at (734) 665-2020, x129 or mary@dentaladvisor.com

3M™ RelyX™ Ultimate Adhesive Resin Cement

5-YEAR CLINICAL PERFORMANCE



3M

www.3M.com

99%
rating at
recall

Description:

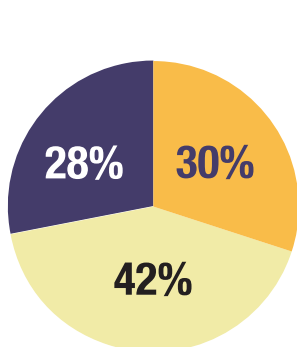
RelyX Ultimate Adhesive Resin Cement is an adhesive resin cement available in a dual-barrel syringe with mixing tips for easy mixing and dispensing. Used in conjunction with *Scotchbond Universal Adhesive*, it results in high bond strength to both enamel and dentin – measured to be over 30 MPa by THE DENTAL ADVISOR. **RelyX Ultimate Adhesive Resin Cement** includes a component that activates the self-cured function of the bonding agent and eliminates the need for an additional dual-cure activator. *Scotchbond Universal Adhesive* also functions as a primer for silica-based ceramics, composite, zirconia and metal substrates. It can be used with total-etch, selective-etch or self-etch bonding techniques. The combination can be used for cementing silica-based ceramic (glass ceramic), zirconia, and PFM and composite restorations including fiber posts. **RelyX Ultimate Adhesive Resin Cement** is available in Translucent, B 0.5 (Bleach), A1 and A3 Opaque shades.



Clinical Evaluation Protocol:

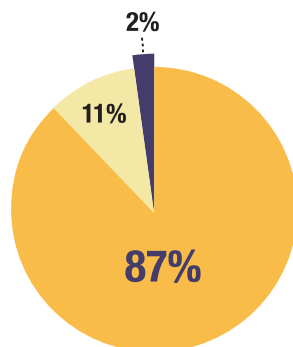
A total of 2126 restorations were placed over a five-year period beginning in January 2012 using **RelyX Ultimate Adhesive Resin Cement** and *Scotchbond Universal Adhesive*. This included 222 pre-existing restorations that had previously been cemented using a different cement and were recemented with **RelyX Ultimate Adhesive Resin Cement**. At five years, 1532 restorations had been recalled (Figure 1). The recalled restorations consisted of 1331 crowns, and 173 three- to five-unit bridges. The remaining restorations consisted of inlays, onlays, veneers and bridges (Figure 2). Sixty-three percent of the restorations were in molars, 25% in premolars and 12% in the anterior region (Figure 3). The vast majority of the restorations were zirconia and silica-based ceramic restorations, with the remainder being ceramic-metal restorations (Figure 4).

Fig. 1: Age of restorations evaluated at five-year recall.



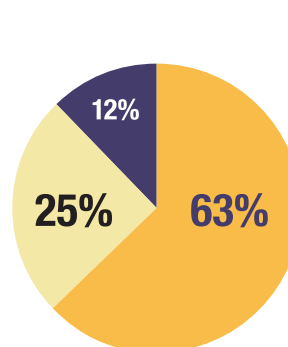
0-2 years
2-4 years
Over 4 years

Fig. 2: Distribution of restorations recalled at five years.



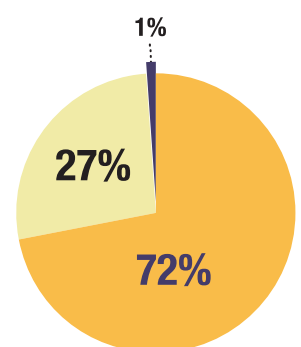
Crowns
3- to 5-unit bridges
Inlays, onlays, veneers, interim bridges

Fig. 3: Distribution of teeth bonded with 3M™ RelyX™ Ultimate Adhesive Resin Cement.



Molars
Premolars
Anterior region

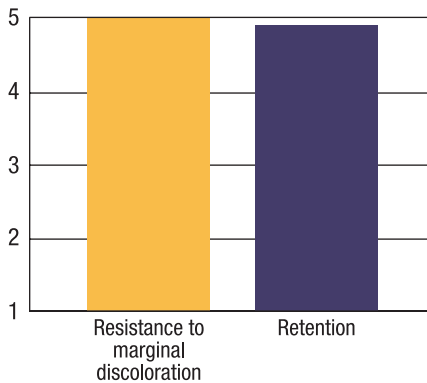
Fig. 4: Types of restorative materials bonded with 3M™ RelyX™ Ultimate Adhesive Resin Cement.



Zirconia
Silica-based ceramic
Ceramic-metal

3M™ RelyX™ Ultimate Adhesive Resin Cement (cont.)

Fig. 5: Results of 3M™ RelyX™ Ultimate Adhesive Resin Cement at five years.



Results at 5 years:

Fifteen hundred and thirty-two restorations (72% of the total number of restoration placed) were recalled by year five and were evaluated in the following areas: resistance to marginal discoloration and retention. Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Resistance to Marginal Discoloration

Resistance to marginal discoloration was rated excellent (Figure 5). Only 19 restorations received a rating lower than 5. Nine had very slight discoloration and received a rating of 4. Of the remaining 10 restorations, six were replaced due to tooth failures and the remaining four were replaced because they received a rating of 2. Even so, the majority of the restorations received a rating of 5.0 at the five-year recall period.

Retention

Retention was rated excellent (Figure 5). During the five-year recall period, 26 of 1532 restorations debonded (1.7% debond rate). Of the 26 debonded restorations, nine of the debonds were associated with tooth failures not related to the cement. The remaining 17 restorations that debonded were recemented with **RelyX Ultimate Adhesive Resin Cement**. Overall, the retention rate was high (98%), attesting to the high bond strength of the cement to both restorative materials and tooth structure.

Summary

Over a five-year period, the clinical performance of **RelyX Ultimate Adhesive Resin Cement** used with *Scotchbond Universal Adhesive* was excellent, based on the ratings for resistance to marginal discoloration and retention. At five years, **RelyX Ultimate Adhesive Resin Cement** received a clinical performance rating of 99%.

Consultants' Comments

- "I've been using **RelyX Ultimate Adhesive Resin Cement** for five years and have not been disappointed."
- "**RelyX Ultimate Adhesive Resin Cement** is my go-to cement since its introduction."
- "I love using **RelyX Ultimate Adhesive Resin Cement** for cementing metal and fiber posts, because 3M has a nice extension for the syringe to fill the canal."
- "Flash cure for only two seconds to make clean up easier; otherwise, removal of excess cement is time consuming."

THE DENTAL ADVISOR TEAM: 2017 Chicago Midwinter Meeting-Chicago Dental Society



Members of THE DENTAL ADVISOR team at the exhibitor's entrance.



Account manager, Chris Voigtman speaks with Tom Czervionke of Bisco.



Dr. Sabiha Bunek tries scanning with a Straumann CARES intraoral scanner (with Yannick Boutin from Dental Wings) at the Benco booth.



Mike Schoen of Ansell and Dr. John Molinari discuss ergonomic examination gloves.

Nanova Biomaterials
www.nanovabio.com



91%
overall
rating



Description

NOVAPRO Fill Universal is a radiopaque, nanofiber-reinforced, nano-hybrid universal composite. It offers flexural and compressive strengths of 160 MPa and 400 MPa, respectively, and low water sorption. The cure time with halogen or LED light (minimum 400 mW/cm2) is 20 seconds, and the composite can be cured in 2 mm increments. **NOVAPRO Fill Universal** is an esthetic restorative material with a chameleon effect, high gloss and stain resistance. It is available in 4 g syringes and 0.2 g compules, with a choice of 24 shades including standard Vita shades, OA shades 2/3/3.5, OB shades 2/3, and incisal, white, extra white, and bleach white. **NOVAPRO Fill Universal** can be kept at room temperature for two years, and refrigeration further prolongs its shelf life.

Indications

- Class I through V direct restorations
- Inlays, onlays and veneers
- Core build-ups
- Splinting

Unique Features

NOVAPRO Fill Universal offers calcium phosphate nanofiber reinforcement, with a high compressive and flexural strength. Eighty percent of the material is cured after 10 seconds.

Evaluation Highlights

NOVAPRO Fill Universal was evaluated by 35 consultants, with an average of 23 uses per consultant.

- Non-tacky, smooth creamy handling, and does not stick to instruments.
- Easy dispensing from syringes.
- Easy to pack and sculpt.
- Large range of shades.
- Excellent strength.
- Finishes nicely.
- Excellent esthetics.
- Good radiopacity.

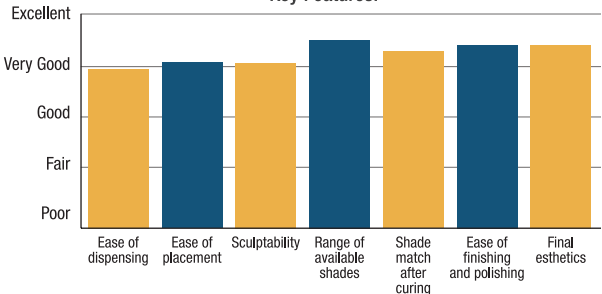
Consultants' Comments

- "Great working properties. It is easy to place and sculpt, and it doesn't stick to instruments."
- "Beautiful esthetics and a good chameleon effect. It blends well with the adjacent enamel."
- "Great for building up missing tooth structure, such as areas with abfractions or a lot of erosion, or if you need a composite that will withstand occlusal trauma/bruxing."
- "Excellent strength and hardness."
- "One of the best filling materials I've used."
- "I found it to slump a bit during sculpting, and it was tough to get sharp anatomy unless you moved quickly."
- "Easy to dispense from the syringes, but difficult to extrude from the compules."
- "Sensitive to ambient light, which made it polymerize prematurely."
- "I would prefer it be slightly creamier and thinner for ease of placement."
- "I would be happy with fewer shades."
- "Make the compules with 0.4 g of composite - I had to use more than one compule for larger restorations."

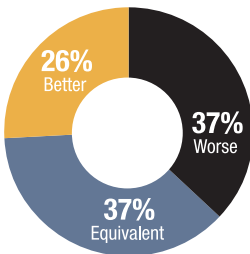
Clinical Tips

- Use the syringe for easy dispensing.
- Use a composite warmer for compules to make the dispensing easier.
- Make your own custom shade tabs if you find the match to traditional Vita-Master or 3D shade guides is slightly off.
- Work quickly and in smaller increments to achieve the best anatomical results.
- Reduce ambient light exposure for more working time.

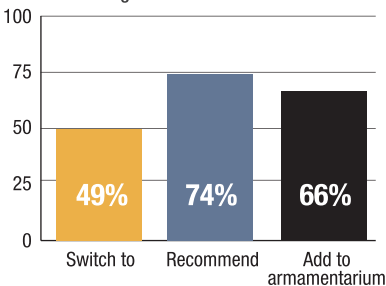
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Nic Tone Natural Rubber Latex Dental Dam



MDC Dental
www.mdcdental.com

86%
overall
rating



Description

Nic Tone Natural Rubber Latex Dental Dam is a pre-cut latex rubber dam that contains a low level of powder and proteins and offers excellent tear resistance. Thin, medium and heavy gauges are available in color-contrasting blue or green. **Nic Tone Natural Rubber Latex Dental Dam** is delivered in two sizes, 5"x5" with 52 sheets per box, and 6"x6" with 36 sheets per box.

Indications

- Procedures requiring use of a rubber dam.
- Suitable when the patient/clinician/assistant does not have an allergy/sensitivity to latex.

Unique Feature

Nic Tone Natural Rubber Latex Dental Dam stretches up to 800% before tearing.

Consultants' Comments

- "I like this latex dental dam better than any I have used."
- "Achieving a seal around the teeth and good isolation is routine with this rubber dam."
- "The thin separator sheet helps prevent smudging when we stamp the rubber dam to mark full-arch punch hole locations."
- "I liked the thickness and the color of the rubber dam."
- "This dam was strong and tear-resistant."
- "Every clinician should try this rubber dam."

Clinical Tips

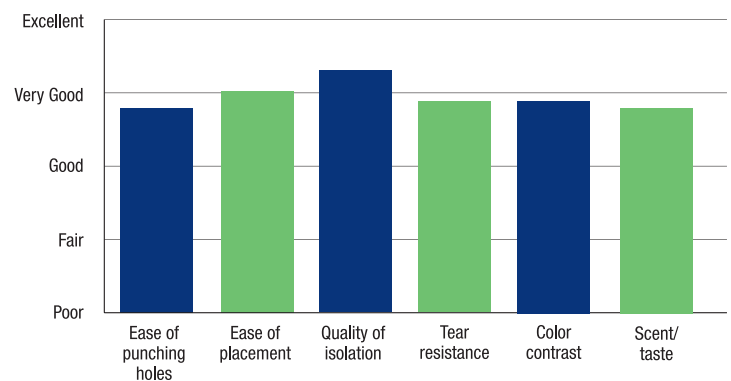
- Use the 5" x 5" size, it requires less cutting of the dam than the 6" x 6" and reduces unwanted covering of the nose.
- Punch larger holes than you think you need.

Evaluation Highlights

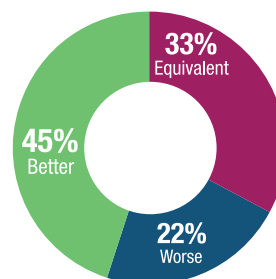
Nic Tone Natural Rubber Latex Dental Dam was evaluated by our consultants, with an average of 27 uses per consultant.

- Easy to use.
- Great tear resistance.
- Adapts well to the teeth.
- Colors offer excellent contrast - good for photography.
- Mint scent/flavor is pleasant.

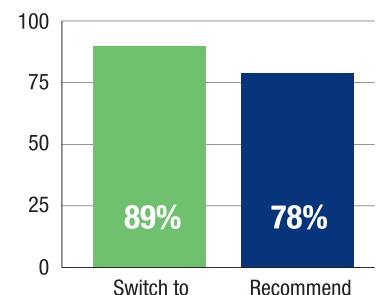
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



Apex ID



96%
overall
rating



Kerr Dental

www.kerrdental.com

Description

Apex ID is a digital apex locator designed with a user-set zero point and continuous calibration. An audible signal indicates when the device turns off. **Apex ID** comes with a docking station, three AAA batteries, a five-pack of lip hooks, a probe cord, one each of file holders A and B, and a checker for performance inspection.



Indications

- Endodontic procedures requiring an apex locator.

Unique Features

- Continuous calibration.
- Can be used in the presence of blood, sodium hypochlorite, and EDTA.

Clinical Tips

- Take the tip to the beyond apex point (to ensure latency) and then bring it back in.
- Ensure that there is consistent movement on the apex locator reading that closely follows your movements.
- Ensure the chamber is dry but leave the canals slightly moist.
- Make sure to use the attachments made for **Apex ID**.

Consultants' Comments

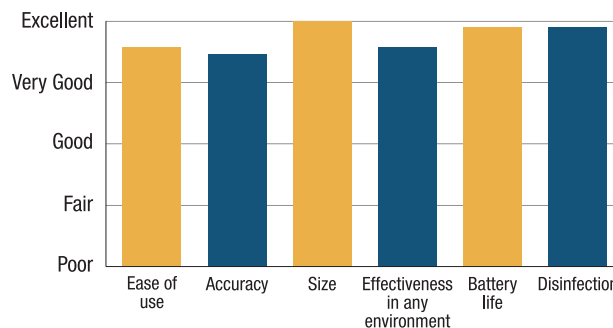
- "The small size of the locator makes it easy to use."
- "Sleek and small."
- "I like the fact that it makes a sound when it shuts off."
- "The weighted base makes the unit stand up easily."
- "I found it to be more accurate with large files than small files."
- "A brighter display it would be easier to read from an angle."
- "The clip was a little large."

Evaluation Highlights

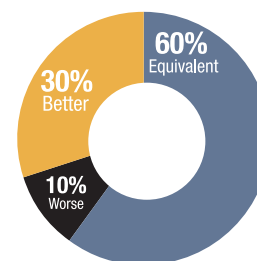
Apex ID was evaluated by 10 consultants with an average of 35 uses per consultant.

- Easy to use.
- Small.
- Good access.
- Reliable and accurate.
- Measurements in 0.1 mm.
- Good readability.
- Weighted base.

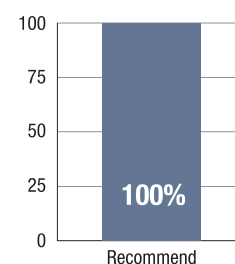
Key Features:



Compared to Competitive Products:



Percentage of Consultants Who Would:



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, 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. Reskakias, 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, MI · K. 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. Steper, 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. Yeager, MI · S. Yun, MI · D. Young, MI · J. Zanetti, MI

Laboratory Consultants:

Apex Dental Milling, MI · Bullinger Dental Lab, MI · Centric Dental Laboratory, TX · Cornerstone Dental Studio, Inc., MI · David's Dental Laboratory, NY · Expertec Dental Lab, MI · Heritage Dental Laboratory, IL · Technique Crown and Bridge, Inc., NC