

THE DENTAL ADVISOR™

“Improving Patient Care Through Research & Education”

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

RATINGS

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



Photography by George Poy, DDS

7th-generation Bonding Agents

Dental bonding agents have evolved since their introduction in 1955 from no-etch to total-etch (4th- and 5th-generation) to the more recent, self-etch systems (6th- and 7th-generation). The newest adhesive system, 7th-generation, combines the acid, primer, and bond in one bottle, requiring a single step with no mixing or etching.

This issue of the THE DENTAL ADVISOR addresses clinically relevant issues with the use of 7th-generation bonding agents, and reports on characteristics, clinical tips, ideal features, and advantages and disadvantages. Sixteen 7th-generation bonding agents are compared.

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7th-generation Bonding Agents

What is a 7th-generation Bonding Agent?

Adhesives for bonding direct and indirect restorative materials to tooth structure have evolved through the years. Variations in the number of bottles, number of steps, chemistry and mechanism of bonding have defined each “generation” of bonding systems. The latest generation of bonding systems, 7th-generation, combines the acid, primer, and bonding resin in one bottle. These materials involve only a single step, eliminating the need for separate etching, rinsing, and mixing for the light-cured products.

Ideal features of a 7th-generation Bonding Agent

- High bond strength (20-30 MPa) to enamel and dentin
- Thin film thickness - to ensure complete seating of restorations
- Fluoride-releasing - prevent onset of secondary caries
- Delivery options - bottle or unit-dose
- Tolerant to moist and dry environment
- Radiopaque - easier to differentiate adhesive layer from recurrent caries
- Eliminates postoperative tooth sensitivity
- Little to no margin discoloration over time
- Available in light-cured and dual-cured formulations
- Good shelf life

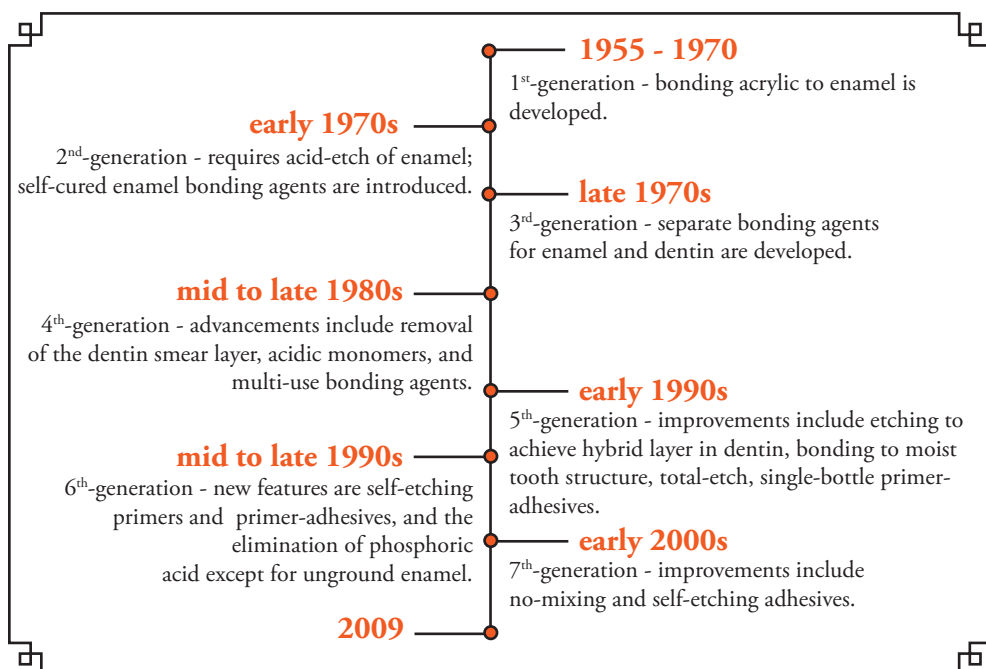
Advantages

- + One step procedure - no mixing or rinsing the tooth
- + Delivery - bottle or unit-dose
- + Less postoperative sensitivity
- + Tolerant to moist or dry environments
- + Available in light-cured and dual-cured formulations

Disadvantages

- Some need refrigeration
- Decreased shelf life due to acidic formulation

History of Bonding Agents



Addressing Clinical Issues

Bond Strength

Bond strengths of 7th-generation bonding agents are similar to previous generations of adhesives if used according to manufacturer's instructions. As with any category of dental materials, there are products that have better properties than others. Therefore, it is important to read non-biased literature and research articles that allow you to make an informed decision on the products you select. In general, if you are bonding an anterior restoration with a large bulk of enamel, you may want to use a total-etch bonding agent.

However, if you are restoring a posterior tooth with exposed dentin and cut enamel margins, you can be confident in using a high quality 7th-generation bonding agent with your composite.

Bonding to Uncut Enamel: to Etch or Not

The self-etching bonding agents (6th- and 7th-generations) utilize acidic monomers that etch and prime dentin. These monomers are also able to etch cut enamel, but some may not be strong enough to adequately etch uncut enamel. Phosphoric acid is a better etchant of uncut enamel. Therefore, if you are utilizing a 6th- or 7th-generation product and are bonding uncut enamel, it is probably safest to etch the uncut enamel area of your preparation with phosphoric acid or "cut" the enamel with a diamond bur before bonding.

Bonding to Deep Dentin

Even with improvements in adhesives, various clinical factors can adversely affect the bond strength. Bond strengths to enamel and superficial dentin are typically greater than that to deep dentin. However, *Xeno IV DC* bonded well to deep dentin.

Ground Enamel	Superficial Dentin	Deep Dentin
25 MPa	18 MPa	20 MPa

Decreased Postoperative Sensitivity

There is usually less postoperative sensitivity associated with the self-etching adhesives (6th- and 7th-generations) than with the total-etch systems (4th- and 5th-generations).

Mechanism of Action

Seventh-generation bonding agents use the smear layer as a bonding substrate. The acidic primer demineralizes the smear layer and the top layer of the underlying dentin surface. The acidic primer also infiltrates the exposed collagen along with the hydrophilic monomers, which then copolymerize. Because the etched surface is not rinsed, the demineralized smear layer is incorporated into the hybrid layer. The hybrid layer ranges in thickness from 0.5 μ m to 5 μ m.

The self-etching products demineralize with an acid and prime the dentin with hydrophilic resin simultaneously in a one-step procedure dissolving the smear layer without exposing the dentinal tubules. Thus, there is no potential to etch the dentin deeper than the primer will absorb. With the total-etch systems, phosphoric acid is used to demineralize dentin. As a separate step, a primer is applied to the demineralized dentin. So, there is a potential for there to be a layer of weak demineralized dentin below the dentin that has been penetrated by the primer. This layer of wet, collapsed collagen can cause the potential for a weak adhesive layer, thus facilitating microleakage.

Dual-cured 7th-generation Bonding Agents

Light-cured 7th-generation bonding agents are not compatible with dual- and self-cured composite cores and resin cements.

The dual-cured 7th-generation bonding agents (*Clearfil DC BOND*, *Futurabond DC*, *Xeno IV DC*) solve this problem.

Overdry or Overwet Tooth

Most seventh-generation bonding agents have water as a solvent. Thus, the wetness or dryness of the tooth surface is less critical than with bonding agents with solvents of ethanol or acetone.

Contaminants: Saliva, Blood

Research on tooth substrates contaminated in vitro with human saliva or human blood showed that bonding agents based on acidic primers were less sensitive to these contaminants. It is recommended that heavily contaminated tooth surfaces be rinsed with water and the bonding agent reapplied.

Storage Stability

The instructions for many 7th-generation bonding agents recommend refrigeration. Increased time of storage and increased temperature of storage can reduce stability, eventually leading to gelation or degradation of the bonding agent.

The acidic primer and adhesive monomers also infiltrate collagen fibers as the primer decalcifies the inorganic component in dentin to the same depth, which should minimize voids, potential leakage, and postoperative sensitivity.

7th-generation Bonding Agents

Characteristics of Different Generations of Bonding Agents

Generation	Components	Characteristics				Uses			
		Phosphoric Acid, Etching & Rinsing	Smear Layer on Dentin	Dual-cured Activator Available	Solvents	Direct, Light-cured Resins	Indirect, Posterior Resins or Ceramics	Self-cured Core Build-ups	Thin Anterior Ceramic Veneers (<1.0 mm)
4 th	Etchant, primer, adhesive (apply components separately)	Yes	Removed	Yes	Acetone or ethanol	Yes	Yes, with dual-cured catalyst	Yes, with dual-cured catalyst	Yes
5 th	Etchant, primer/adhesive (apply components separately)	Yes	Removed	Some products	Acetone or ethanol	Yes	Yes, with dual-cured catalyst	Yes, with dual-cured catalyst	Yes
6 th (Type I)	Acidic primer, adhesive (apply components separately)	No	Modified	Some products	Water	Yes	No	Yes	Yes (etch or pumice enamel)
6 th (Type II)	Acidic primer/adhesive (mix components and apply)	No	Modified	No	Water	Yes	No	Yes, with dual-cured catalyst	Yes (etch or pumice enamel)
7 th	Acidic primer/adhesive (no mixing, apply)*	No	Modified	Some products	Water or solvent free	Yes	Yes, with dual-cured catalyst	Yes, with dual-cured catalyst	Yes (etch or pumice enamel)

*Dual-cured product requires mixing

Clinical Tips

- Due to the chemistry of the bonding agent, it is important to shake the bottle before dispensing and agitate the liquid on the tooth with a microbrush while applying.
- Teeth can be moist or dry; however, avoid pools of water or over-drying.
- Eugenol-based materials can lower bond strength to dentin. If a eugenol-based material must be used, pumice the tooth before bonding.
- Residual oxygen from take-home or in-office whitening can lower bond strength. Wait several days to one week after bleaching before a bonding procedure.
- Some bonding agents etch the surface of the metal matrix band, making it difficult to remove the band. Scratching the surface of the metal band with a spoon excavator after bonding but before placement of the composite is helpful.
- Do not use 7th-generation bonding agents as a wetting agent in between layers or on top of composite.
- Be aware of the expiration date and do not purchase more than you need.

Manufacturer Instructions

If you are going to use 7th-generation bonding agents, be sure to read directions carefully so as not to compromise the end result. Many products recommend applying more than one coat and have specific recommendations for evaporating the solvent. It is important to note that although 7th-generation bonding systems are all-in-one, in some cases it may take longer than some two- or three- step bonding systems.

Decision Making

The most important factor when choosing an adhesive for a restoration is whether you are bonding primarily to enamel or dentin. If bonding to enamel, then it is recommended you use a total-etch system. If you are bonding to dentin and concerned about sensitivity, then you may opt for a self-etch system.

Survey of Clinical Consultants

Seventy-four of our clinical consultants responded to a survey on usage of bonding agents - the results are listed below.

Editors' Note: The survey results were not used to rate products.

Do You Use 7th-generation Bonding Agents?

Yes	51%	No	49%
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Bonding Agent Use by Generation

	4 th	5 th	6 th (Type I)	6 th (Type II)	7 th
Bonding Agent primarily used	16%	28%	23%	11%	22%

Level of Sensitivity Reported

	4 th	5 th	6 th (Type I)	6 th (Type II)	7 th
Often/Sometimes	13%	15%	11%	16%	9%
Hardly ever/Never	87%	85%	89%	84%	91%

Bonding Agent Use by Procedure

	4 th	5 th	6 th (Type I)	6 th (Type II)	7 th
Veneers	23%	42%	18%	5%	12%
Anterior composites	14%	36%	21%	10%	19%
Posterior composites	14%	28%	24%	10%	24%
Composite cores and esthetic posts	14%	25%	24%	15%	22%
Resin cements	16%	35%	24%	5%	20%

Conclusions

Trends toward a simplified application of bonding agents with a reduction in the number of steps have been answered by self-etching bonding systems. With a one-step system, 7th-generation bonding agents reduce the time needed to place the adhesive as well as a reduction in postoperative sensitivity. Seventh-generation bonding agents offer good bond strengths to tooth structure and are less technique sensitive than total-etch systems (4th- and 5th-generation) and 6th-generation bonding agents.



**Bond-1 SF Solvent Free
SE Adhesive**
(Pentron Clinical Technologies)



Futurabond DC
(VOCO America, Inc.)



OptiBond All-In-One
(Kerr Corporation)



**3M ESPE Adper Easy Bond
Self-Etch Adhesive**
(3M ESPE)



go!
SDI (North America), Inc.



BOND FORCE
(Tokuyama Dental Corp./
Tokuyama America, Inc.)

7th-generation Bonding Agents

Product	Company	Type of Cure	Dispensing	Fluoride Release	Refrigeration Required	Clinical Rating
3M ESPE Adper Easy Bond Self-Etch Adhesive	3M ESPE	LC	B, UD	No	No (if used within 6 months)	96%
AdheSE One F	Ivoclar Vivadent	LC	B, VP	Yes	No	na
BOND FORCE	Tokuyama America	LC	B, UD	Yes	Yes	96%
Bond-1 SF Solvent Free SE Adhesive	Pentron Clinical Technologies	LC	Syringe, UD	No	Yes	ce
Clearfil DC BOND	Kuraray America	DC	B	No	Yes	94%
Clearfil S3 BOND	Kuraray America	LC	B, UD	No	Yes	B-92%, UD-98%
e-Bond	Prime Dental Manufacturing	LC	B	Yes	Yes	na
Futurabond DC	VOCO America, Inc.	DC	B, UD	Yes	No	96%
G-BOND	GC America	LC	B, UD	No	No	97%
go!	SDI (North America), Inc.	LC	B, UD	Yes	Yes	94%
iBond Self Etch	Heraeus	LC	B, UD	No	No	na
One Coat 7.0 Bond	Coltene/Whaledent	LC	B	No	Yes	na
OptiBond All-In-One	Kerr Corporation	LC	B, UD	Yes	Yes	96%
PRIMA 1	B.J.M. Laboratories, LTD.	LC	B, UD	No	No	na
Xeno IV	DENTSPLY Caulk	LC	B, UD	Yes	Yes	93%
Xeno IV Dual Cure	DENTSPLY Caulk	DC, LC	B, UD	Yes	Yes	96%

*LC=Light Cure, DC=Dual Cure, B=Bottle, VP=VivaPen, UD=Unit Dose, ce = Currently Evaluating, na = Not Clinically Evaluated.
For more information on 7th-generation Bonding Agents,
visit Product Comparison Tables or the online issue at www.dentaladvisor.com.*

TDA Recommends	
Dual-cured	Light-cured
• Futurabond DC (VOCO America, Inc.) • Xeno IV Dual Cure (DENTSPLY Caulk)	• G-BOND (GC America) • 3M ESPE Adper Easy Bond Self-Etch Adhesive (3M ESPE) • BOND FORCE (Tokuyama Dental Corp./Tokuyama America, Inc.) • Clearfil S3 BOND (Kuraray America) • Optibond All-in-One (Kerr Corp.)

Associate Editor Profile

Kathy L. O'Keefe, DDS, MS

Dr. Kathy L. O'Keefe received the DDS degree from the University of Texas Dental Branch at Houston in 1985 and the Master of Science degree in Oral Biomaterials from the University of Texas School of biomedical Sciences at Houston in 2000. Dr. O'Keefe was a member of the faculty of the University of Texas Dental Branch at Houston for 20 years. She now practices general dentistry in Houston, Texas. As a Scientist in the Houston Biomaterials Research Center, Dr. O'Keefe has conducted research on adhesive and restorative dentistry. She has published many articles and presents her research nationally.



Translating the Science

Bond strength is the most common mechanical property used to characterize bonding agents. Bond strength in excess of 18 MPa is desirable for bonding of a composite and ceramic to tooth structure. Variables that can affect bonding are the cavity design, the cleanliness of the preparation, and the sensitivity of the bonding agent to moisture.

There are two popular types of bond tests, the tensile test and the shear test. The Micro-tensile Test (Figure 1) uses 1.0-mm² specimens prepared from human teeth and composite. The Truncated Cone Tensile Test (Figure 2) bonds a small cone of composite to tooth tissue. The Ultradent Shear Bond test (Figure 3) bonds a small cylinder on the prepared tooth tissue.

Both tensile and shear tests are relevant to the type of loading a restorative material bonded to tooth structure will encounter, since mastication forces are a complex combination of these forces. The bond strengths generated by each of these tests are often different from each other. The variations result from differences in the way the specimens are prepared and the role that flaws contribute to bonding.

This issue of THE DENTAL ADVISOR compares shear bond strengths of the bonding agents bonded to human enamel and dentin using one composite material (**TPH3**, DENTSPLY Caulk).

Both tensile and shear bond strength data (when available) have been included in THE DENTAL ADVISOR Online Product Comparison Table, Bonding Agents - 7th-generation.

THE DENTAL ADVISOR bond strength results may differ some from those reported in other publications and advertising. THE DENTAL ADVISOR testing is performed on recently extracted adult human teeth by following the manufacturer's directions as written. Sometimes instructions are ambiguous (e.g., the dryness of the cleaned tooth surface or the thinness of the bonding agent and how long one blows on the material to evaporate the solvent). THE DENTAL ADVISOR works closely with the manufacturer to understand the intent of their instructions.



Fig 1 Micro-tensile Test (Bisco)



Fig 2 Truncated Cone Tensile Test



Fig 3 Ultradent Shear Bond Test

Examples of 7th-generation Bonding Agent Bond Strengths Tested by Two Methods

Composite: TPH3 (DENTSPLY Caulk)

Product (Company)	Tensile Cone Bond Strength to Ground Enamel, MPa	Tensile Cone Bond Strength to Superficial Dentin, MPa	Ultradent Shear Bond Strength to Ground Enamel, MPa	Ultradent Shear Bond Strength to Superficial Dentin, MPa
BOND FORCE (Tokuyama Dental Corp./Tokuyama America)	32	28	24	35
go! [SDI (North America)]	30	18	24	22
OptiBond All-in-One (Kerr Corporation)	28	28	26	40

GlasSpan, Inc.
800.280.SPAN 800.280.7726
www.glasspan.com

EXCLUSIVE REVIEW

Description

SpectraFill is a light-cured, nano-microhybrid composite that contains fluoride and is based on a BIS-GMA-resin formula with inorganic filler particles. **SpectraFill** is indicated for both anterior and posterior Class I, II, III, IV and V restorations and corresponds to Vita shades. The composite should be cured in increments no greater than 2 mm. with a light intensity of at least 1000mW/cm² for 20 seconds. **SpectraFill** is available in shades B1, A1, A2 and A3. It is sold in quantities of 5 boxes of 20, 0.3-g unidose tips or quantities of 5, 10 or 20, 4.5-g syringes. **SpectraFill** was evaluated by 20 consultants placing over 500 restorations and received a 91% clinical rating.

Suggested Retail Cost

- \$24.95-\$34.95/syringe (based on quantity)
- \$54.99/20 unidose tips (based on quantity)

Product Features

SpectraFill is suitable for both anterior and posterior applications. It is easy to handle and packs well into the prepared tooth without sticking to the placement instruments. Consultants noted a shift in shade of the composite during curing. The uncured material is bright and opaque compared to the finished restoration, which rated highly for blending with the tooth and final match to the Vita Shade guide. The ease of final finish and polish was also rated above average. Sixty percent of consultants rated **SpectraFill** equivalent to or better than their most frequently used light-cured, microhybrid composite, 90% stated they would recommend **SpectraFill**, and 35% would switch to it.

Clinical Tips

- Cure a small increment of composite on the tooth to confirm shade if esthetics are crucial.
- Use a patting and spreading motion to sculpt and contour the composite.

Translating the Science

Mechanical Properties of SpectraFill

Composites have replaced amalgams because of their acceptable mechanical and physical properties, as well as their tooth-colored esthetics. The important mechanical properties of composites include their compressive strength, flexural strength and flexural modulus. These properties are important because the durability of a composite restoration is dependent on its capability to withstand high occlusal loads that cause both compressive and flexural stresses in the material.

A composite should have a compressive strength in the range of 250-450 MPa and a flexural strength and modulus in the range of 80-160 MPa and 8.8-13 GPa respectively.

SpectraFill (GlasSpan, Inc.) has a compressive strength of 405 MPa, flexural strength of 121 MPa and flexural modulus of 9.3 GPa. Its mechanical properties are well positioned in the above ranges, making **SpectraFill** a mechanically sound resin composite.

Editors' Note: Additional shades will soon be available. ■



Consultants' Comments

- ◆ "Esthetically, it is as good as some of the best composites I have used."
- ◆ "The translucency is hard to beat."
- ◆ "Shade shift takes some getting used to."
- ◆ "A good, basic composite for most of my restorative needs."

Profluorid Varnish + + + +

VOCO America
888.658.2584
www.vocoamerica.com



Technique Videos:

Visit online at www.dentaladvisor.com
to view an Information Video on this product

Description

Profluorid Varnish is a 5% sodium fluoride varnish for surface application to enamel and dentin. It is designed to adhere to wet surfaces and be tolerant of moisture and saliva. It is indicated for use in treatment of hypersensitive teeth, sealing the dentinal tubules for cavity preparations, on sensitive root surfaces, and as a cavity liner under amalgam restorations. **Profluorid Varnish** is melon flavored, and is available in a 50-count box of sealed, single-dose packets with applicator brush. Adult (0.4 ml) and child (0.25 ml) doses are available. Twenty-seven consultants evaluated **Profluorid Varnish** in over 500 clinical cases. This fluoride varnish received an 86% clinical rating.

Suggested Retail Cost

- \$78.95/50-count box

Product Features

Profluorid Varnish is applied as a thin film on dental hard tissues after thoroughly cleaning the treatment area. The removal of excessive moisture and saliva helps ensure the best results.

Profluorid Varnish is transparent, with a smooth consistency, and contains xylitol. Consultants noted that the package was larger than many other fluoride varnishes, and the varnish stuck to the foil lid when opening. Several consultants commented that the taste could be improved.



Consultants' Comments

- ◆ "Pretty easy to apply."
- ◆ "Transparent quality is nice."
- ◆ "Does not flake off into the mouth as much as other varnishes."
- ◆ "I like to offer patients a variety of flavors - not everyone likes melon."
- ◆ "Packaging was difficult to open and to remove the brush."

Seventy-four percent of consultants rated **Profluorid Varnish** equal to or better than their current fluoride varnish, while 68% would recommend it and 50% would switch to **Profluorid Varnish**.

Clinical Tip

- Rinse the patient's mouth after placement of **Profluorid Varnish** to help harden the material. Rinsing usually helps reduce the sticky feeling in the mouth. ■



John Molinari, Ph.D.
Director of Infection Control

The Dental Advisor Welcomes...

THE DENTAL ADVISOR is delighted to announce the addition of **Dr. John Molinari** to our team. **Dr. Molinari** is a world expert in the areas of **Infection Control and Infectious Disease** in Dentistry. His primary position will be as Director of Infection Control, where he will be performing in-depth product analysis, dental research, and educating dental professionals through speaking, webinars, and podcasts.

Based in Ann Arbor, MI, **THE DENTAL ADVISOR** has been providing dental professionals with **evidence-based** and **clinically relevant** information on dental products and equipment. **THE DENTAL ADVISOR** reports objective clinical evaluations, product comparisons, comprehensive long-term clinical performance studies, and unbiased laboratory test results.

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Alesar Dental, Inc.
866.387.8259
www.jmdental.org

Description

ThermaGrip is a placement system for indirect restorations. The system includes a heating unit, adhesive pellets and bendable brushes. The lightweight, portable heating unit is used to soften an adhesive pellet and transfer it to the restoration. The end-tufted brush is then submerged into the heated adhesive, creating a handle on the restoration. After the restoration is placed in the mouth, the adhesive is removed by pulling on the handle. The adhesive and brush are designed to release cleanly, leaving no residue on the restoration. The primary use of the **ThermaGrip** is to increase the efficiency of placing inlays, onlays and veneers. The **ThermaGrip** system includes the heating unit, three AA batteries, a cassette with adhesive pellets, and a package of microbrushes. **ThermaGrip** was evaluated by 10 consultants in over 100 clinical cases and received an 82% clinical rating.

Suggested Retail Cost

- \$299.00/kit

Product Features

ThermaGrip allows clinicians to handle small restorations during the insertion phase of treatment. The system effectively allows placement of these restorations without any unwanted contact to the internal ceramic or metal surface. **ThermaGrip** provides a firm attachment to the brush and releases without leaving any residue on the restoration. The adhesive quality of **ThermaGrip** to the restoration is good. Overall, any efficiency gained in the procedure is in the placement of the restoration in the mouth rather than in the setup of the adhesive and handle onto the restoration. Thirty percent of evaluators reported they would use **ThermaGrip** in place of their current transfer method, 40% rated



Consultants' Comments

- ◆ "Good product for those hard-to-place restorations."
- ◆ "A nice way to handle ceramic inlays during HF etching and silanization."
- ◆ "It's a safer and more secure transfer in the maxillary posterior compared to using my fingers."
- ◆ "Works surprisingly well."
- ◆ "I like to keep things simple; the extra steps are somewhat cumbersome."
- ◆ "Occasionally the adhesive would dislodge from the ceramic surface."

ThermaGrip as better than their current method, and 60% would recommend it to a colleague.

Clinical Tips

- Establish the bend and orientation of the brush before adhering it to the restoration.
- Gently bend the heating tip up to 45° for easier handling. ■

Request a Sample

Free product samples or additional information from companies including:

- | | |
|--|-----------------------------|
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| • Cavex Holland BV | • Cranberry USA |
| • DiaDent Group International | • DentalEZ Group |
| • DUX Dental | • Greater Curve |
| • Kerr Corp | • Kuraray America |
| • MEDICOM, Inc. | • NEO Dental International |
| • Pentron Clinical Technologies | • SDI (North America), Inc. |
| • Seltzer Institute | • Shofu Dental Corp |
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Visit www.dentaladvisor.com today to request your free product samples!

GC America
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Description

G-CEM Automix is a new delivery system for the paste/paste formulation of this self-adhesive resin cement. The cement is dual-cured, fluoride-releasing and self-etching. Indications include cementation of ceramic-metal, zirconia and all-ceramic restorations, plus metal/fiber and ceramic endodontic posts. It contains water and functional monomers (4-MET and phosphoric acid ester) for self-adhesive properties to dentin and enamel. According to the manufacturer, this combination increases the initial hydrophilicity of the cement, allowing penetration into dentinal tubules before the material sets and becomes hydrophobic. The dual-cured mode allows for easy clean-up and higher strength within the first 10 minutes. G-CEM is available in shades A2 and Translucent. The **G-CEM Automix** kit comes with two 2.7-mL syringes and 20 mixing tips. Narrow *Endo Extension Tips* are available separately. Twenty-nine consultants evaluated **G-CEM Automix** in cementing over 580 restorations. This cement received a 98% clinical rating.

Suggested Retail Cost

- \$123.00/kit

Product Features

G-CEM Automix provides a uniform mix with easy dispensing from the syringe directly into the restoration or tooth. The short mixing tips produce little waste. Working time is sufficient for use with multiple-unit restorations. Consultants rated the viscosity highly, noting that it is fluid enough to coat the tooth and restoration without impeding complete seating of the restoration. The dual-cured feature allows quick, easy clean-up of excess cement.



Consultants' Comments

- ♦ "I found this cement easy to mix, dispense, and clean up after setting."
- ♦ "The auto-mix tip can dispense directly into the restoration."
- ♦ "Removal of excess was about the easiest I have encountered."
- ♦ "No sensitivity occurred during seating of restorations."
- ♦ "Versatile cement - I use it for almost everything."

Overall, 100% of evaluating consultants rated **G-CEM Automix** the same as or better than their current cement, 79% would switch to it, and 90% would recommend this product.

Clinical Tips

- For easy cement removal, tack cure with a curing light for three seconds, then light cure each surface for two seconds.
- For metal-based or other opaque restorations, have the patient maintain pressure for at least four minutes after initial tack cure and clean-up. ■

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ClearCheck SLP + + + +

Shofu Dental Corporation
800.827.4638
www.shofu.com

Description

ClearCheck SLP is a multi-use, light-cured dental resin indicated for sealing pit and fissures, application to margins of resin restorations and sealing resin cement around orthodontic brackets. It can also be used to glaze or seal surfaces of temporary or permanent resin restorations and is compatible with caries-detecting devices. When used on tooth structure, cleaning with oil-free pumice followed by etching with phosphoric acid is required. **ClearCheck SLP** contains hydrophilic resins, fluoride and no solvents. Curing time is 20 seconds, and the sealant is compatible with halogen and LED lights. It is supplied in 1.2-ml syringes with disposable, single-use tips. The kit contains four syringes, 20 applicator tips and instructions for use. **ClearCheck SLP** was evaluated by 21 clinicians in over 300 applications and received an 86% clinical rating.

Suggested Retail Cost

- \$99.00/kit

Product Features

ClearCheck SLP is useful for various procedures. When used as a pit and fissure sealant, the low viscosity of the material is beneficial for penetration into deep areas. A narrow-lumen tip is advised to avoid expressing too much material onto the tooth. The clear sealant allows visualization of the underlying tooth and also allows the use of laser caries-detection devices. When used as a liquid polish or glaze, the material is best applied with a bristle brush. Since the sealant is clear, the esthetics received high ratings.



Consultants' Comments

- ◆ "Flows well, bubble free, useful for many procedures."
- ◆ "Easy to apply."
- ◆ "Doesn't affect final shade of restorations."
- ◆ "I would like an etchant included in the kit."
- ◆ "This clear material can be difficult to see during application."

Eighty-one percent of consultants rated **ClearCheck SLP** equal to or better than their current product and 76% would recommend this product to their colleagues.

Clinical Tips

- Use light pressure when extruding the material from the syringe.
- Etching is not necessary when applying **ClearCheck SLP** to composites or temporary materials.
- For use on broad surfaces, dispense material into a dappen dish and use a brush to apply it. ■

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