

# THE DENTAL ADVISOR<sup>TM</sup>

"Improving Patient Care Through Research & Education"



Photography by Ron Yapp, M.S., Ann Arbor, Michigan

## Traditional Crown and Bridge Cements

Cementation of permanent restorations is a daily procedure for dentists. The wide spread use of all-ceramic, high-strength ceramic and laboratory composite restorations has made the selection of appropriate cementation systems more complicated. Permanent cements may be broadly categorized into adhesive resins, esthetic resins and traditional crown and bridge cements. Traditional cements may be used for cementation of all-metal, ceramic-metal, high-strength ceramic, and laboratory composite restorations. They are not designed for use with all-ceramic veneers and crowns but are acceptable for all-ceramic inlays/onlays.

This issue of THE DENTAL ADVISOR reviews and rates traditional crown and bridge cements, including compomer, glass ionomer, hybrid ionomer, resin ionomer, and zinc polycarboxylate cements, with an emphasis on advantages and disadvantages, indications and clinical tips.

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AND BRIDGE CEMENTS** ..... 2

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### Ratings

|           |       |
|-----------|-------|
| Excellent | +++++ |
| Very Good | ++++  |
| Good      | +++   |



Resin Ionomer

Resin ionomer cements are composed of hydrophilic Bis-GMA oligomers. They are used with a bonding agent.

Advantages

- Dual-cured
- High bond strength to tooth when used with bonding agent
- Some fluoride release
- Radiopaque

Disadvantage

- Difficult to remove excess

Indications

- All-ceramic inlays/onlays
- High-strength ceramic and composite crowns, bridges, inlays/onlays
- Metal and ceramic-metal restorations

Clinical Tip

- Use a bonding agent to achieve highest bond strength.

**THE DENTAL ADVISOR Recommends:**

Glass Ionomer: **3M ESPE Ketac-Cem (95%);**  
Hybrid Ionomer: **GC Fuji Plus (96%),**  
**GC FujiCEM (95%)**



95%

**GC FujiCEM**  
(GC America)

**Other Featured Products**



**Infinity Syringeable**  
(Den-Mat)

Zinc Polycarboxylate

Zinc polycarboxylate cements are powder-liquid systems containing polyacrylic acid, zinc oxide, magnesium oxide, and other fillers. One cement (**Tylok-Plus**) is provided as a powder and is mixed with water. These cements set relatively fast but have lower strength than hybrid ionomers or compomers. Polycarboxylate cements provide a low film thickness if mixed properly and have a low chemical bond to enamel, dentin and metal. Minimal pulpal irritation may be attributed to the neutral pH and large molecular weight of polyacrylic acid.

Advantages

- Pseudoplastic (shear thins) when mixed correctly
- Relatively low film thickness
- Bonds slightly to tooth structure by calcium chelation
- Kind to pulp

Disadvantages

- Low rigidity and strength compared to other cements
- Difficult to remove excess from the preparation when used during the provisional phase

Indications

- Metal/ceramic-metal crowns and bridges
- Provisional cementation

Clinical Tips

- Clean tooth.
- Proper measuring and mixing of powder and liquid will result in good viscosity and a thin film thickness.
- Prepare metal surfaces by sandblasting.
- Clean spatula before set – bonds to metal.
- Good cement for sensitive teeth.
- Strength can be improved by incorporation of 25% more powder.
- Fast set formulation (**3M ESPE Durelon Carboxylate Luting Cement**) sets quickly for easy clean up. ■

| Product                                   | Company           | Dispensing                                 | Working Time, min:sec | Setting Time, min:sec | Shades        | Flexural Strength, MPa | Flexural Modulus, GPa | Cost per ml                                                                                                                                                 | Clinical Rating |
|-------------------------------------------|-------------------|--------------------------------------------|-----------------------|-----------------------|---------------|------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Compomer                                  |                   |                                            |                       |                       |               |                        |                       |                                                                                                                                                             |                 |
| PermaCem Dual Smartmix                    | Zenith Dental/DMG | Automix handheld syringe                   | 1:30                  | 5:00                  | 1             | DC-113.0, SC-111.0     | DC-8.2, SC-8.1        | \$15.93/ml                                                                                                                                                  | 90%             |
| PermaCem Automix Dual                     | Zenith Dental/DMG | 52 gm automix cartridge for dispensing gun | 1:30                  | 5:00                  | 1             | DC-113.0, SC-111.0     | DC-8.2, SC-8.1        | \$5.79/ml                                                                                                                                                   | 88%             |
| Principle                                 | DENTSPLY Caulk    | Powder/liquid                              | 4:00                  | 3:00                  | Tooth colored | DC-72.0, SC-59.0       | DC-7.8, SC-6.8        | \$11.45/ml                                                                                                                                                  | 90%             |
| Glass Ionomer                             |                   |                                            |                       |                       |               |                        |                       |                                                                                                                                                             |                 |
| 3M ESPE Ketac-Cem                         | 3M ESPE           | Capsule and powder/liquid                  | C-3:00, PL-3:30       | 7:00                  | A1            | C-11.0, PL-17.0        | C-8.9, PL-11.6        | Intro Pack: \$6.00/ml, Maxicap Standard Pack: \$16.11/ml, Maxicap Intro Pack: \$19.44/ml, Aplicap Standard Pack: \$47.14/ml, Aplicap Intro Pack: \$81.57/ml | 95%             |
| Aqua Meron                                | VOCO              | Powder/liquid                              | 3:00                  | 6:00-7:00             | 1             | 13.6                   | 1.8                   | \$2.40/ml                                                                                                                                                   | na              |
| GC Fuji I                                 | GC America        | Capsule and powder/liquid                  | 1:15-2:30             | 2:20-2:50             | Light yellow  | 14.0                   | 14.5                  | PL Kit: \$3.87/ml, Capsule Package: \$33.96/ml                                                                                                              | na              |
| Meron AC                                  | VOCO              | Capsule                                    | 3:00                  | 5:00-6:00             | 1             | 16.5                   | 3.2                   | \$9.44/ml                                                                                                                                                   | na              |
| Riva Luting                               | SDI               | Capsule and powder/liquid                  | C-2:15, PL-2:00       | C-4:35, PL-4:20       | Light yellow  | 20.14                  | 4.09                  | PL Kit: \$2.70/ml, Capsule Kit: \$6.88/ml                                                                                                                   | na              |
| Hybrid Ionomer                            |                   |                                            |                       |                       |               |                        |                       |                                                                                                                                                             |                 |
| 3M ESPE RelyX Luting Plus                 | 3M ESPE           | Autodispense dual-barreled syringe         | 2:30                  | 5:00                  | A1            | 13.0                   | 3.3                   | Trial Kit: \$15.61/ml, Refill Kit: \$14.80/ml                                                                                                               | 93%             |
| GC FujiCEM                                | GC America        | Autodispense syringe                       | 3:00                  | 4:30                  | Yellow        | 8.2                    | 3.0                   | Starter Package: \$13.65/ml, Refill Package: \$11.68/ml                                                                                                     | 95%             |
| GC Fuji Plus                              | GC America        | Capsule and powder/liquid                  | 2:15-2:30             | 4:00                  | Yellow        | 10.0                   | 3.4                   | PL NO Etch Package: \$9.84/ml, PL Package: \$10.94/ml, Capsule Package: \$15.82/ml, Capsule NO Etch Package: \$12.24/ml                                     | 96%             |
| Resin Ionomer                             |                   |                                            |                       |                       |               |                        |                       |                                                                                                                                                             |                 |
| Infinity Syringeable                      | Den-Mat           | Autodispensed dual-barreled syringe        | 2:00-3:00             | 3:00                  | Tooth shade   | 56.0                   | 6.0                   | Value Kit: \$16.72/ml, Kit: \$23.80/ml                                                                                                                      | 91%             |
| Zinc Polycarboxylate                      |                   |                                            |                       |                       |               |                        |                       |                                                                                                                                                             |                 |
| 3M ESPE Durelon Carboxylate Luting Cement | 3M ESPE           | Capsule and powder/liquid                  | Maxicap-2:30, PL-2:30 | Maxicap-5:30, PL-7:00 | Light pink    | Maxicap-14.0, PL-15.0  | Maxicap-4.5, PL-4.0   | PL Triple Pack: \$2.97/ml, PL Intro Pack: \$5.29/ml, CD Triple Pack: \$2.00/ml, CD Intro Pack: \$5.20/ml, Maxicap Standard Pack: \$15.82/ml                 | 86%             |
| LIVCARBO Polycarboxylate Cement           | GC America        | Powder/liquid                              | 1:30-2:30             | 5:45                  | Light yellow  | 6.0                    | 3.0                   | \$3.71/ml                                                                                                                                                   | na              |
| Tylok-Plus                                | DENTSPLY Caulk    | Powder/liquid                              | 1:45                  | 7:00                  | Ivory         | 13.1                   | 6.4                   | Kit: \$4.56/ml, Refill \$3.97/ml                                                                                                                            | na              |

na = not available  
PL = powder/liquid, C = capsule

**EDITORS' NOTES:** Only products evaluated by THE DENTAL ADVISOR will have a rating listed, and are eligible for listing as a recommended product. Some table information provided by manufacturers. Costs are listed for comparison only and are not used to calculate the ratings.

# TESCERA ATL + + + + +

**Bisco**  
800.247.3368 • 847.534.6000  
www.bisco.com

### Description

**TESCERA ATL** is an indirect composite system indicated for fabricating inlays, onlays, and crowns. In the laboratory, a polymerization unit processes the composites in an oxygen-free environment utilizing water, pressure, light, and heat. Opaque dentin and translucent body composites are available in a full range of Vita shades. Additional incisal shades and characterization materials are available. Cementation with resin cement is recommended. This product received a 98% clinical rating.

### Clinical Evaluation Protocol

- 46 restorations were placed in 34 patients.
- 30 restorations were available for evaluation at two-years.
- Restorations evaluated included inlays and onlays in 13 premolar and 17 molar teeth.
- Restorations were evaluated on a 1-5 rating scale:  
1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent

### Clinical Observations

#### Resistance to Fracture/Chipping

One fracture of a **TESCERA ATL** restoration occurred during the two-year evaluation period. This involved a bulk fracture of an inlay on tooth #15-MO. The inlay was subsequently replaced.

2-YEAR CLINICAL PERFORMANCE



#### Consultants' Comments

- ▶ *"Restorations are smooth and blend well."*
- ▶ *"Reliable material for indirect inlays and onlays."*
- ▶ *"Shades are true to the shade guide."*

#### Shade Match/Esthetics and Vitality

Restorations produced excellent blending with adjacent tooth enamel. Translucency of the composite allowed some of the underlying tooth color to shine through the restorations, enhancing vitality and esthetics. Only in one case – involving a darkly stained tooth – did the translucent quality negatively affect the final appearance. **TESCERA ATL** was resistant to staining, and surfaces retained a smooth surface.

#### Marginal Discoloration

Resistance to marginal staining received excellent ratings from 96% of the consultants. Margins remained well sealed, and in many cases, were undetectable.

#### Wear Resistance

Surface wear was evaluated visually, both on the **TESCERA ATL** restorations and on the opposing dentition. Ninety-six percent of the restorations showed no visible signs of wear. No opposing wear was noted. ■

# Flexitime Xtreme + + + + 1/2

**Heraeus Kulzer, Inc.**  
800.431.1785 • 914.273.8600  
www.heraeus-kulzer-us.com

### Description

**Flexitime Xtreme** is an addition silicone impression material that is available in wash (green) and tray (purple) viscosities. It differs from the original **Flexitime** by having a faster setting time and a wild berry scent. It is also highly hydrophilic. The material contains a unique formula, ATS (Advanced ThermoSense), which is sensitive to mouth temperature to allow a flexible working time of 30-90 seconds. The intraoral setting time is 90 seconds. The Starter Kit contains four, 50-ml cartridges of the tray material; two, 50-ml cartridges of light body; and mixing and intraoral tips. Twenty-four consultants evaluated **Flexitime Xtreme** in more than 212 clinical applications. This product received a 95% clinical rating.



#### Consultants' Comments

- ▶ *"Good detail reproduction."*
- ▶ *"The material sets fast and the margins are easy to read."*
- ▶ *"Less waste because of the smaller mixing tips."*
- ▶ *"The light viscosity stacks well."*
- ▶ *"It is difficult to see how much material is remaining in the cartridge."*

**Editors' Note:**  
*For this evaluation, Clinical Consultants were asked to compare Flexitime Xtreme to other addition silicone materials, rather than fast or ultra-fast setting addition silicone materials.*

**Suggested Retail Cost**  
• \$96.45/Starter Kit

### Product Features

**Flexitime Xtreme** received very good ratings for every characteristic evaluated including viscosities of the wash and tray materials, tear resistance and lack of voids. The flexible working time provides enough time to take an impression of one or two preparations, while the fast intraoral set increases patient comfort. The set impressions exhibit excellent margin detail, which is easily visualized with the color contrast of the wash and tray materials. Patients responded favorably to the wild berry scent, and no reports of poorly fitting restorations were generated during the clinical evaluation. The majority of consultants rated **Flexitime Xtreme** equivalent to or better than their current impression material, while 82% would recommend it. ■

# PowerTemp + + + +

**J. Morita USA**  
800.831.3222 • 949.581.9600  
www.jmoritausa.com

### Description

**PowerTemp** is a non-eugenol, zinc oxide temporary cement that will not inhibit the curing of permanent resin cements. It is suggested for the cementation of temporary crowns and bridges, as well as trial cementation of permanent restorations. The cement is supplied in a conventional 50-ml, 1:1 auto-mixed cartridge with 10 XX-small mixing tips. The cement is applied directly into the restoration and seated on the moist preparation within 90 seconds of dispensing. Intraoral setting time is two



#### Consultants' Comments

- ▶ *"The setting time is good."*
- ▶ *"We cemented 85 units with one cartridge."*
- ▶ *"Material sticks to the prep."*
- ▶ *"Excess cement does not come off in one piece."*
- ▶ *"Provide more mixing tips."*

to three minutes. Cross contamination with set cement may result in a failure of the cement. Twenty-nine consultants evaluated **PowerTemp** in over 330 uses. This product received an 87% clinical rating.

**Suggested Retail Cost**  
• \$79.00/kit

### Product Features

The auto-mixed cartridge system delivers a homogeneous mix that is neat and easy to dispense and clean up. The viscosity of **PowerTemp** is low enough to allow

easy dispensing through the XX-small mixing tips and high enough to allow the stacking of the cement in a restoration. The mixing tips are short and narrow, resulting in a minimal amount of wasted cement. After dispensing, the material bleeds from the tip until set. Consultants noted that only a few mixing tips were provided for the large cartridge. The retention of crowns was rated good, with only a few cement failures being reported. Retention of bridges received a very good rating. No unexpected post-operative sensitivity was noted. Fifty-seven percent of the responding consultants judged **PowerTemp** to be equivalent to or better than their current temporary cement. Forty-five percent would switch to **PowerTemp** and 64% would recommend the cement to a colleague.

### Clinical Tips

- Do not dry preparation before using **PowerTemp** – keep the tooth moist.
- Allow the cement to fully set for easier removal of excess material.
- Leave the used mixing tip on the auto-mixed cartridge to prevent cross contamination of the cement components.
- When done using the material, place the cartridge on a paper towel to catch cement that continues to flow from the tip. ■

#### SENIOR CLINICAL CONSULTANTS

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J. Bostic, OH  
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E. Bowser, PA  
R. Bozell, MI  
M. Braverman, NY  
L. Brimhall, MT  
M. Briskin, NY  
C. Brown, LA  
L. Brown, MI  
W. Brownscombe, MI  
H. Buckwald, NJ  
J. Bush, PA  
H. Cadorette, MI  
Z. Campbell, MI  
P. Campo, NY  
M. Chaben, MI  
D. Chacko, TN  
S. Cheff, TX  
R. Cherry, FL  
P. Chiaravalli, MI  
T. Chuang, NJ  
A. Colarusso, NY  
M. Conrad, PA  
M. Cooks, MI  
K. Dancy, GA  
M. Danner, IL  
S. Dillingham, NY  
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J. DiPonziano, NJ  
R. Donelli, NY  
R. Dost, VA  
J. Doueck, NY  
M. Dwoskin, MI  
M. Eannaccone, NY  
B. Eggart, AR  
R. Engle, IL  
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# Odyssey + + + + 1/2

Ivoclar Vivadent, Inc.  
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### Description

**Odyssey** is an 810 nm diode laser and is indicated for soft tissue modification and hemostasis. The laser beam is focused, concentrated, and delivered through a 5.5 m (18 ft) retractable fiber-optic cable. The light produced by the **Odyssey** is invisible, non-ionizing, thermal radiation. **Odyssey** has a digital power display ranging from 100 mW to 5 W. The control panel allows the operator to increase or decrease the power. To ensure safety, the unit must be turned on using two distinct switches; protective lenses should be worn by the clinician. The **Odyssey** is a table-top unit with dimensions of 14 x 16 x 22 cm (5.5 x 6.25 x 8.75") and weighs 2.5 kg (5.5 lbs). A one-year warranty covers parts and labor, while the fiber-optic cable has a 90 day warranty. Eight consultants evaluated the **Odyssey** in over 100 procedures. It received a 92% clinical rating.

**Suggested Retail Cost**  
• \$11,700



### Consultants' Comments

- ▶ *"Faster healing than other methods of tissue removal."*
- ▶ *"Great for removing fibromas and desensitizing apthous ulcers!"*
- ▶ *"Can almost eliminate the need for packing cord when used before preparation."*
- ▶ *"Less effective in areas of significant bleeding."*
- ▶ *"The glasses required while using the Odyssey are too large and challenging to keep in place."*

### Equipment Features

The instruction manual and procedure guide are well illustrated and informative. These are supplemented by a hands-on instructional session with an Ivoclar Vivadent, Inc. representative. Consultants appreciated the compactness and portability of the **Odyssey**, especially when compared to other units on the market. The handpiece is lightweight and easy to use with the 90° angled tip. The 45° angled and straight tips were not found to be as useful. Consultants found the controls on the unit to be clear and simple to use, offering the necessary number of settings and quick transition between modes. The **Odyssey** has two settings.

In the continuous mode, the laser energy is uninterrupted for maximum energy delivery. For a more controlled technique, the pulse mode flows the energy intermittently to allow for tissue relaxation. The unit can be used in an uninitiated and initiated technique. In the un-initiated technique, the laser fiber does not come in contact with the tissue, and is used for the treatment of soft tissue aphthous ulcers or to create hemostasis in areas experiencing minor bleeding. The initiated technique uses contact of the optic fiber with the gingiva to modify tissue and to re-contour the gingival or to excise fibromas. In the initiated technique, the laser tip is initiated at a low power by gently touching it to a piece of blue articulating paper. Best soft tissue results are provided by using a smooth movement and the lowest possible setting; this technique will minimize rough and singed tissue that can result in compromised final impressions. Consultants were most pleased with the rapid results and faster healing as compared to electrosurgery. Seven of the eight consultants evaluating the **Odyssey** would recommend it to a colleague, and would switch from their current method of tissue removal.

### Clinical Tips

- Work at the lowest possible setting and move in a continuous motion to ensure ideal tissue removal.
- Remove tissue before preparing a crown to minimize bleeding. Use again at the end of the procedure, if needed.
- To treat an aphthous ulcer, start 10 mm from the lesion at a low un-initiated setting and move the tip closer in a circular motion until it is very close. Stop if the patient reports discomfort.
- Check with your state licensing office to see if your state permits hygienists to use a diode laser under dentist supervision.
- The laser can be used to re-contour or bevel thick tissue.
- When cutting efficiency is decreased, clear the end of the fiber-optic tip. ■

# GuttaFlow® + + + +

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

### Description

**GuttaFlow** is a flowable, gutta percha obturation material that is used in combination with gutta percha endodontic points for the permanent obturation of root canals. It is a two-component system that combines a radiopaque polydimethylsiloxane sealer and gutta percha particles in a capsule. When triturated, the material is used as a bulk-filling sealer in combination with a master gutta percha point for obturation. The flowable gutta percha is injected directly into the canal from the capsule using a canal tip. The material is eugenol-free and biocompatible according to the manufacturer's studies. The kit contains 20 **GuttaFlow** capsules, 20 canal tips, 20 rubber stops, one capsule dispensing gun, and assorted gutta percha points – standard AAE/ISO sizes 15-40 and 0.04 taper sizes 20-45. **GuttaFlow** was used by consultants in over 130 endodontic procedures. This product received an 86% clinical rating.

**Suggested Retail Cost**  
• \$295.00/kit

### Product Features

The majority of consultants who evaluated **GuttaFlow** were currently using rotary files and lateral condensation of gutta percha cones for root canal preparation and obturation. Since no condensation is required with **GuttaFlow**, the material allows for the elimination of multiple steps. Unlike plastic-carrier obturation, the material is soft enough to allow for traditional re-treatment or post-space preparation as needed. **GuttaFlow** does not emit any odor and has good post-operative response by patients. The radiographic density and lateral canal fill were found to be excellent on post-operative x-rays. The consistency and flow of the material were mentioned by several consultants as positive features. Most found the instructions and packaging to be adequate and the contents of each capsule to be more than enough for multiple canals. Consultants had concerns with the tendency for excess gutta percha overfill both out the apex and in the pulp chamber, which made clean-up difficult. Also, the plastic

capsule tips are easily bent and sometimes difficult to negotiate into narrow canals. Since post spaces and cores could not be placed for at least 30 minutes, some consultants felt the material was not as beneficial when these restorative procedures were necessary. Sixty-seven percent of consultants found **GuttaFlow** to be equivalent to or better than their current sealer and obturation material. Forty-six percent of consultants would switch from their current technique to **GuttaFlow** and 60% would recommend it to a colleague.



### Consultants' Comments

- ▶ *"Good for lateral canal filling."*
- ▶ *"Nice radiographically-dense filling."*
- ▶ *"Fast and easy to use."*

### Clinical Tips

- Make some trial mixes to ensure the capsule will mix consistently in the triturator before use.
- Use a wet cotton pellet to remove excess sealer from the pulp chamber.
- A firm apical stop is necessary to prevent overfills through the apex.
- Wait until material is set (35 minutes) before placement of post or core. ■

**Editors' Note:**  
***GuttaFlow** is recommended for all triturators (except centrifugal style). An adapter has been developed by Coltène/Whaledent which allows the capsules to work in the **RotoMix**™ centrifugal triturator from 3M ESPE.*

### CLINICAL CONSULTANTS

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M. Morin, MI  
S. Munro, WI  
W. Nagy, TX  
J. Nash, MI  
A. Nazarian, MI  
N. Nealis, IL  
L. Neuberger, ND  
C.J. Noe, MD  
E. Odenweller, OH  
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## ParaCem® Universal DC + + + +

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

### Description

**ParaCem Universal DC** is a dual-cured resin cement with fluoride release. It can be used for the permanent cementation of all indirect restorations including crowns, bridges, inlays/onlays, and posts. **ParaCem Universal DC** is now indicated for core build-ups. A step by step instruction card for the various indications is now included in each introductory kit. The kit contains three, 2.5-g syringes of base (one each of shades A2, B3 and white opaque), one syringe of catalyst, 3-ml **ParaBond** non-rinse conditioner, 3-ml each of **ParaBond** dual-cured adhesive liquids A and B, and accessories. The base (A2 and B3) can be light-cured for cementation of composite or ceramic veneers. The adhesive should be brushed into the tooth surface for 30 seconds. Mixing time for the cement is 30 seconds with a working time of three minutes and a total setting time of four minutes after cementation. **ParaCem Universal DC** can be light-cured for 30 seconds to accelerate the set. Twenty-four consultants used **ParaCem Universal DC** for cementation of 66 posts and 193 restorations. This product received an 86% clinical rating.

### Suggested Retail Cost

- \$269.00/introductory kit

### Product Features

All the components required for cementation using **ParaCem Universal DC** are packaged in a compartmentalized plastic container. The non-rinse conditioner simplifies the bonding



### Consultants' Comments

- ▶ "Excellent viscosity – easy to clean up."
- ▶ "Simple and easy to use – versatile."
- ▶ "Laminated instructions for different procedures would be very helpful."
- ▶ "Auto-mixed cements are easier to use than this hand-mixed cement."

procedure by eliminating the rinsing step, or if desired, a phosphoric acid etch can be used. As with most bonding systems, there is a mild odor associated with the adhesive. The ease of mixing the base and catalyst and the resultant viscosity were judged to be very good. The low film thickness allows complete seating of the restorations without the need for heavy pressure. No post-operative sensitivity or debonding of restorations was reported during the evaluation period. Seventy-four percent of consultants rated **ParaCem Universal DC** equivalent to or better than their current cement and 83% would recommend it.

### Clinical Tips

- Do not use the white opaque base as a light-cured cement for veneers. Always mix the white opaque base with catalyst to ensure complete polymerization.
- After seating the restoration, do not disturb the cement until it reaches a gel-like consistency.
- 35% phosphoric acid etchant may be used as an alternative to the **ParaBond** non-rinse conditioner. ■

## Vitique + + + +

Zenith Dental/DMG  
800.662.6383 • 201.894.5500  
www.zenithdental.com

### Description

**Vitique** is a dual-cured esthetic resin cementation system. The Introductory Kit includes eight shades of light-cured cement, matching try-in shades, high and low viscosities of catalyst, veneer application tips, and mixing tips. Catalyst is provided in unique **Cata-Lock** syringes that interlock with the cement syringes. A mixing tip attaches to the assembly for dispensing of mixed cement. When the base (light-cured) cement is used alone, it can be dispensed through the veneer application tips, which apply a ribbon-shaped line of cement to the internal



### Consultants' Comments

- ▶ "Nice user's manual."
- ▶ "May not normally need all of the shades (pink), but they are nice to have."
- ▶ "Include etch and bonding agent in the kit."

surface of the veneer. The working time is at least two minutes and light curing is accomplished in 40 seconds. Shades are A1, A2.5, A4, B1, transparent, pink, white, and bleach light. Thirteen consultants evaluated **Vitique** Introductory Kit over a two-month period, cementing 115 veneers, 48 inlays, 54 crowns and three bridges. This product received an 87% clinical rating.



## Tetric EvoCeram + + + +

Ivoclar Vivadent  
800.533.6825 • 716.691.0010  
www.ivoclarvivadent.us.com

### Description

**Tetric EvoCeram** is a universal, nano-hybrid 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. Nineteen radiopaque shades are available: A1, A2, A3, A3.5, A4, B2, B3, C1, C2, C3, D3 (enamel shades), A3.5, A4, B2 (dentin), T (transparent incisal), XL, L, I, M (bleach). This light-curing composite consists of particles ranging in size from 40 to 3,000 nm with an average particle size of 550 nm. Total content of inorganic fillers for the bleach shades is 60-61% by volume (79-80% by weight) and for all other shades 53-55% by volume (75-76% by weight.) **Tetric EvoCeram** takes advantage of nano-technology to allow for better polishing and lower shrinkage. It is packaged in both 0.2 g, color-coded, unit-dose Cavifils and 3 g, color-coded syringes. Both the syringe and the unit-dose packages come with a custom shade guide. Twenty-five consultants used **Tetric EvoCeram** in over 200 anterior and 300 posterior teeth. This product received a 96% clinical rating.



### Suggested Retail Cost

- \$125.00/unit-dose assortment
- \$285.00/syringe assortment

### Product Features

Consultants rated **Tetric EvoCeram** as an excellent universal composite. Ease of finishing, blending with the tooth, quality of final polish, and final esthetics of **Tetric EvoCeram** were rated as excellent. Most consultants stated that the esthetics of the final restoration was the feature they most liked. Color-coding of composite shades on the syringe labels and unit-dose caps make it easy to identify the proper material at a glance. Packability of composite, quality of interproximal contacts, and shade match to the Vita shade guide were rated as very good to excellent. Many consultants found the shade guide to be helpful. Eighty-eight percent of consultants found **Tetric EvoCeram** to be equivalent to or better than their current composite and 95% of consultants would recommend **Tetric EvoCeram** to a colleague. ■

### Consultants' Comments

- ▶ "I loved the way it blended with the tooth."
- ▶ "Easy to place, sculpt and, in general, work with."
- ▶ "Good handling characteristics...just about the perfect consistency."
- ▶ "Include more of the lighter shades in the kit."
- ▶ "Sensitive to ambient light during placement."

### Suggested Retail Cost

- \$890.00/Introductory Kit

### Product Features

The number of shades and accuracy of the try-in pastes were the most highly rated features of **Vitique**. While not all of the shades were commonly used, their availability makes **Vitique** especially valuable for difficult shade matches. Consultants rated the trueness of shades and overall esthetic results high and commented positively about the ribbon tips for cementing veneers. The **Cata-Lock** syringe system is cumbersome to use and requires some practice to assemble before the first clinical use. The low-

viscosity catalyst rated slightly higher than the high-viscosity catalyst; overall, consultants found the ability to choose the viscosity an advantage. Seventy-five percent of consultants reported **Vitique** to be equivalent to or better than their current product, and 70% would recommend it to a colleague.

### Clinical Tips

- Practice with the **Cata-Lock** syringe system before the first use with a patient.
- Catalyst should be refrigerated. ■

### CLINICAL CONSULTANTS

J. Paris, TX  
D. Parris, GA  
D. Parsons, NY  
M. Patel, MI  
T. Paumier, OH  
L. Perratto, NY  
S. Picazio, NJ  
T. Pieper, WY  
D. Pietz, NC  
W. Piskowski, MI  
D. Pitak, MI  
S. Pomerance, MI  
D. Powers, MI  
L. Pozarny, NY  
C. Price, TX  
D. Qualliotine, NC  
G. Raichelson, Canada  
C. Ramsey, FL  
S. Ratner, NY  
R. Reichl, GA  
G. Reskakis, NY  
C. Rice, MA  
A. Ridall, TX  
J. Riggs, MI  
M. Rogers, PA  
W. Roper, TX  
F. Ross, WI  
K. Ross, MI  
K. Rowan, MO  
R. Sambuchi, MI  
A. Sandak-Albright, NY  
P. Sandvick, WI  
D. Schimmel, PA  
G. Schultz, PA  
J. Sedlock, WI  
R. Shah, MI  
M. Shapiro, MI  
J. Shea, MO  
J. Sinkwits, MI  
H. Sletten, PA  
R. Smith, NY  
S. Smith, FL  
M. Sonne, MI  
J. Spingarn, FL  
S. Steedman, WA  
R. Stevenson, MI  
W. Stevenson, MI  
K. Stoffers, MI  
D. Stutman, NY  
K. Swearingen, OH  
M. Sylvester, CA  
P. Symeonides, NY  
J. Tabash, MO  
H. Tetelman, OH  
F. Tom, MA  
R. Tonelli, WI  
G. Trompeter, MI  
C. Trubschenck, CA  
P. Tu, CA  
S. Ura, NH  
J. Utess, MI  
H. Vann, MS  
J. Van Tiem, MI  
W. Walcott, MI  
L. Walsh, MI  
M. Waranowicz, MI  
M. Warshanna, MD  
R. Wilkie, MI  
S. Williams, MO  
R.G. Willis, SC  
K. Wilson, MI  
R. Wolf, IN  
F. Wood, PA  
P. Yaman, MI  
H. Yeung, CA  
D. Young, MI  
S. Young, NY  
M. Zahn, MI  
J. Zanetti, MI  
P. Zanetti, MI  
G. Zann, FL  
S. Zimmer, MI

### LABORATORY CONSULTANTS

Alpha Dental Studio, MI  
Nellmar Laboratory, LLC, MI

**J. Morita USA, Inc**  
800.831.3222 • 949.581.9600  
www.jmoritausa.com

## Description

**Root ZX II** is a battery-operated apex locator with an optional low-speed handpiece module, and according to the manufacturer, produces clinical accuracy not influenced by blood, other discharges, or electrolytes. A larger color graphic display, along with auditory signals, shows the file position relative to the apical constriction. The file lead can be attached to the file during negotiation of the canal or simply touched to files that are already in place. The base of the unit is broad for improved stability, and it accepts a low-speed handpiece module. The apex locator is active while the handpiece is in use, giving the user a graphic display and auditory signal of the file location at all times. The motor system offers speeds from 150–800 rpm, automatic reverse when reaching the apex, automatic slow-down near the apex, and an automatic reverse system that is based on a torque meter incorporated in the system. Each of the features may be activated or deactivated, according to the user's preference. The unit comes with three pre-set programs that may be changed as needed. The file holder and lip clip are autoclavable, and the unit itself is smooth and easy to disinfect. Five consultants used **Root ZX II** with the low-speed handpiece module in over 100 procedures. This product received a 96% clinical rating.

## Suggested Retail Cost

- \$2,450 with low-speed handpiece module

## Equipment Features

Accuracy of the **Root ZX II** apex locator was rated as excellent. The new color LCD display is easy to read, and the auditory tones are subtle to not disturb the patient.



## Consultants' Comments

- ▶ "A 'must have' for my endodontic procedures."
- ▶ "Sounds are more pleasant than on the original unit."
- ▶ "Easy to move from room to room because of its compact size."
- ▶ "Automatic reverse and torque control have a learning curve."

The large base was considered more stable and an improvement over the original unit. The handpiece module attaches easily to the back of the unit, providing a compact device for operation of rotary instruments. The handpiece begins operation automatically as soon as the file is introduced into the canal. While a foot pedal is included, consultants found the automatic start feature a convenience and used it almost exclusively. Pre-programmed modes are useful, yet easy to change when desired. The automatic reverse and the torque meter were highly rated features of the motor unit. Consultants noted that there was a learning curve with the system and that the automatic reverse activated too early when canals were overly wet. Four out of five consultants reported that **Root ZX II** was better than their current apex locator and would both switch to and recommend this equipment.

## Clinical Tips

- Make sure canal is well lubricated but not too wet.
- Remove rubber stoppers from rotary files to allow secure attachment of the handpiece's grounding clip.
- Check with the manufacturer of your rotary files for proper speed and torque settings. ■

## What's New?

Beta Technologies, Inc. (800.680.7246/sales@hsvfree.com) has introduced **Viral Inhibitor**, offering a treatment for patients who suffer from frequent cold sores and other irritations related to herpes virus. The **Viral Inhibitor** is a small, hand-held device that reportedly targets viruses associated with cold sores (oral herpes), shingles, genital herpes, and molluscum. It is also indicated for some warts, moles, and other growths, but only those caused by a herpes-type virus. It features two non-metallic probes that apply a waveform across the viral laden region to reportedly disrupt viral activity and aid in natural healing. The waveform signal passes from one probe through the affected skin to the other probe for 10 seconds, then instantaneously switches direction for another 10 seconds. Changing light colors inside the **Viral Inhibitor** show when this reversal takes place and also indicate the unit is working properly. Once all lights turn off, the cycle is completed. For cold sores, it is recommended the patient apply the device up to eight times per day until symptoms disappear. Look for the results of a clinical evaluation in an upcoming issue of THE DENTAL ADVISOR. ■

