EMBRACE™ WETBOND™

MOISTURE TOLERANT DENTAL RESINS
FOR THE MOIST ORAL ENVIRONMENT

PULPDENT CORPORATION

CONSIDER THESE TRUTHS

- The oral environment is a naturally wet environment
- Dentin contains approximately 15% water
- Enamel contains approximately 4% water
- Traditional dental resins are not moisture friendly; they require a dry environment
- Drying dentin disrupts the natural chemistry of the tooth and is a cause of sensitivity
- Microleakage causes recurrent decay and failure
- Sealing margins is critical for preventing marginal leakage

The Challenge

The challenge for dental researchers has been to develop materials that behave favorably in the moist oral environment.

Traditional Resins are Hydrophobic

Traditional dental resins are based on Bis-GMA and urethane di-methacrylate (UDMA) monomers that are hydrophobic, repel water and require a dry environment.

This is not convenient in the mouth.

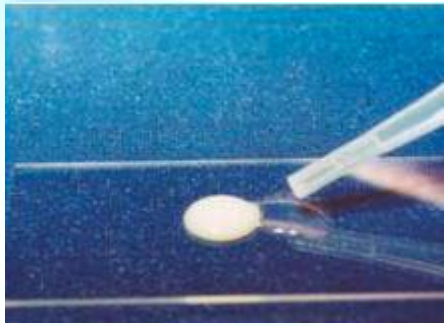
EMBRACE is Moisture Tolerant

PULPDENT has developed EMBRACE™ WetBond™ resins, which are hydrophilic, moisture tolerant and form a positive association with water, taking advantage of the moisture that is always present in the mouth.

EMBRACE + Water Demonstration

Embrace is water friendly. It even mixes with water. In fact, moisture activates the Embrace resin chemistry, enabling it to better integrate with tooth structure.

A drop of Embrace Pit & Fissure Sealant is placed on a glass slide.



A drop of water is placed next to Embrace.

Embrace mixes with the water.

EMBRACE Chemistry

Embrace incorporates di-, tri- and multi-functional acrylate monomers into an advanced resin acid-integrating network that is activated by moisture and is recommended for use on slightly moist tooth surfaces.

EMBRACE: An Acidic Monomer

When activated by moisture, Embrace is acidic. In the cured state, the material is no longer affected by water, has a neutral pH and extremely low water solubility of 0.06%

UNCURED Embrace (pH2)
+ DRY litmus paper
= No reaction

UNCURED Embrace
+ WET litmus paper
= Reaction indicating pH<1

CURED Embrace
+ WET litmus paper
= No reaction

Defining Slightly Moist Tooth Surfaces

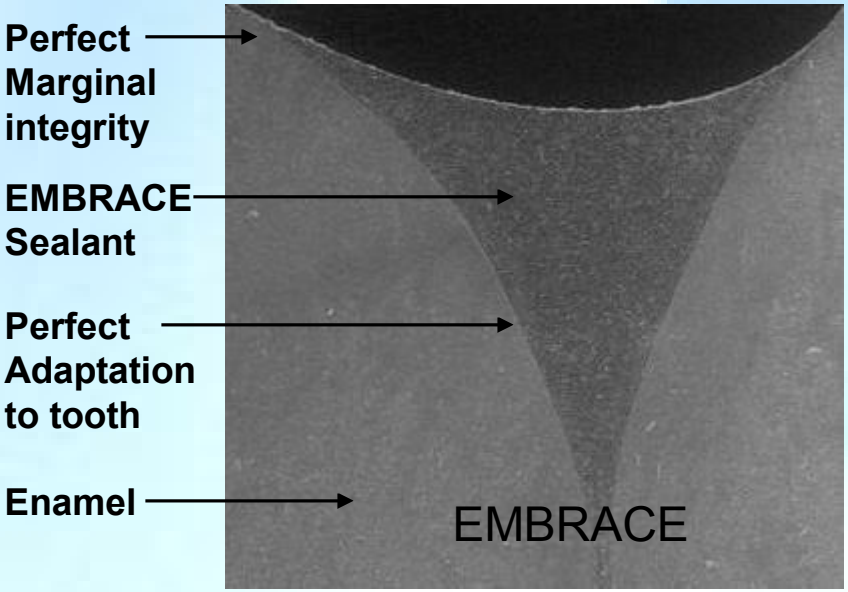
Slightly moist tooth surfaces exhibit neither dryness nor pooling of water. Lightly dry and remove excess water with compressed air or a cotton pellet. Tooth surfaces should be shiny or glossy.

After etching and rinsing, the slightly moist tooth appears shiny and glossy.

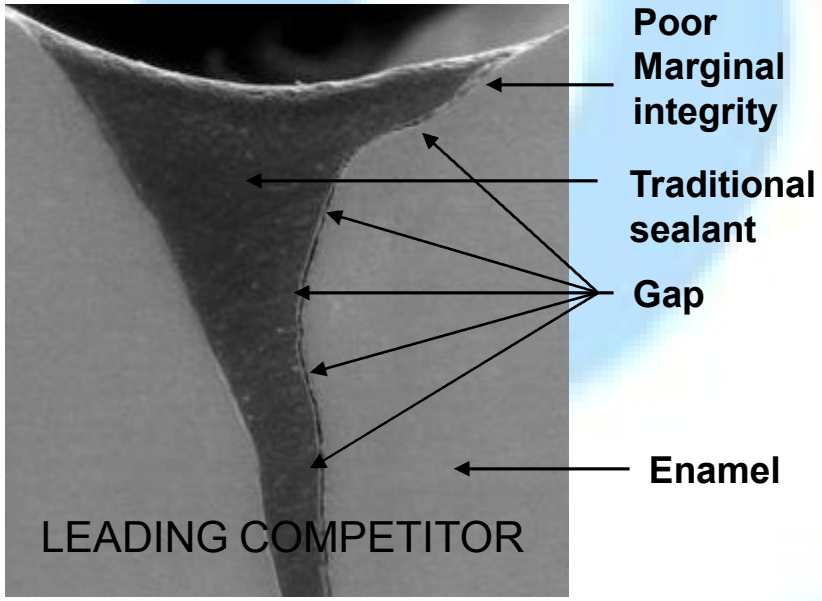
After etching, rinsing and drying, the tooth appears chalky white.

EMBRACE: Tooth Integrating, Margin-free

Embrace resins form an intimate association with the moist tooth. They are tooth integrating, creating a margin-free interface between the resin and the tooth that is entirely unique, eliminating microleakage.



SEM shows Embrace Pit & Fissure Sealant without bonding agent. Note extraordinary adaptation of sealant to the tooth and smooth margin.



SEM shows leading competitor's traditional fissure sealant. Note large gap between the sealant and the tooth.

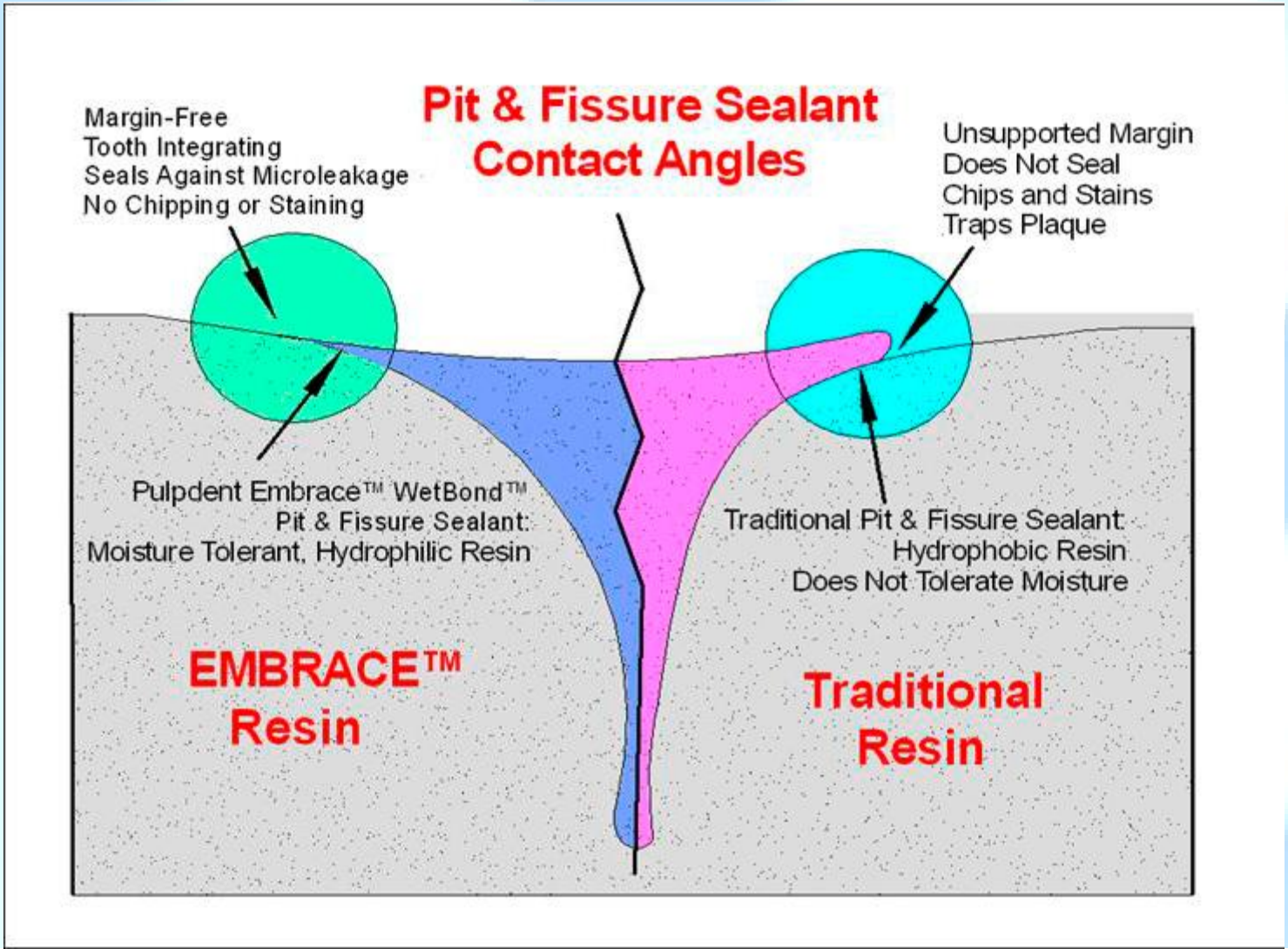
“It’s amazing. I can’t find the margin.”

After curing Embrace, clinicians report they cannot find the margin with an explorer. Embrace is tooth integrating and margin-free with a very low contact angle that is perfectly adapted to the anatomy of the tooth and provides an exceptional seal against microleakage.

“Margins are incredibly smooth . . . virtually undetectable.”

Dental Advisor 2004;21(8)

Low Contact Angle – Seals Against Microleakage

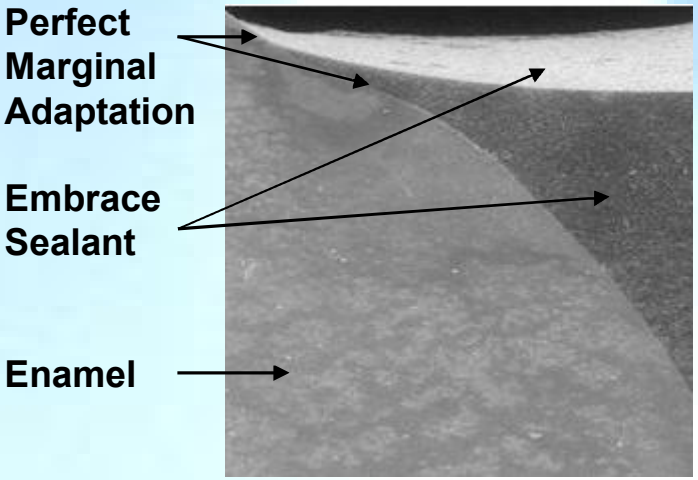


EMBRACE Seals Against Microleakage

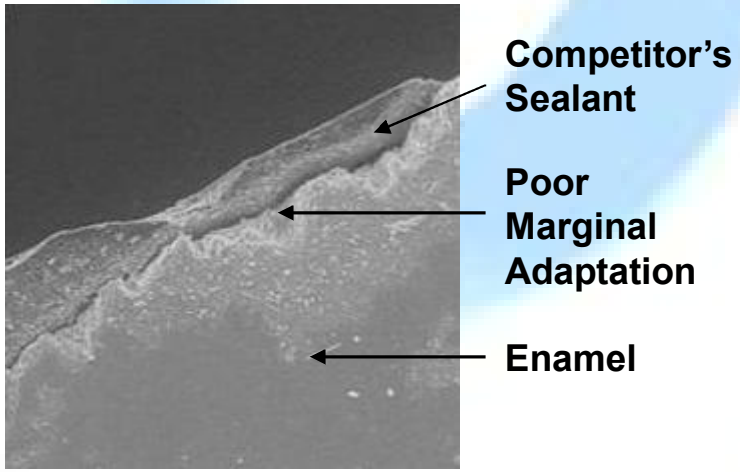
Microleakage and the inability to create a permanent seal at the margins results in decay and failure of restorations.

Embrace performed exceptionally in marginal leakage testing, without using adhesives or bonding agents.[1,2,3]

1. Pameijer CH; 2. Degrange M; 3. Khanbodaghi A, Kugel G, Sharma S, Ferreira S



SEM of EMBRACE Pit and Fissure Sealant shows perfect marginal adaptation. This margin-free phenomenon seals against microleakage and prevents caries.



SEM of leading competitor's pit and fissure sealant shows poor marginal adaptation, which will result in microleakage and caries.

EMBRACE: No Sensitivity Reported

Teeth contain water, and desiccating dentin disrupts their natural chemistry and is a cause of sensitivity.

Microleakage, movement of fluids in the dentinal tubules, acids and chemical irritants also cause sensitivity.

Embrace resins eliminate these causal factors. They are biocompatible, nonirritating, contain no solvents, require no etching or drying of dentin, and provide an exceptional seal against microleakage.

EMBRACE™ WetBond™ Pit & Fissure Sealant

Light Cure · Fluoride Releasing · Radiopaque

- Bonds to the moist tooth
- Tooth integrating
- Margin-free
- Exceptional marginal seal
- Eliminates microleakage

BEST SEALANT EVER

Here's what your colleagues have to say about EMBRACE WetBond Pit & Fissure Sealant:

"It's an absolutely sensational product."

John D. Doykos III, DMD, MSD

"Moist field placement increases success and reduces frustration."

Peggy Yamagata, RDH, MED

"Margins are incredibly smooth . . . virtually undetectable."

Dental Advisor 2004;21(8)

"[Sealants] looked the same as they did the day we placed them."

RDH 2006;26(7):58-60

"Bonds under adverse conditions."

REALITY 2006

"100% caries free."

RDH 2006;26(7):58-60

Nothing is Faster or Easier

Clean, isolate, etch tooth for 15 seconds. Rinse well. Remove excess water. LEAVE TOOTH SURFACE SLIGHTLY MOIST.

Apply Embrace sealant on the slightly moist occlusal surface.

Light cure

With EMBRACE Pit & Fissure Sealant, the moisture in the mouth is beneficial, and bonding agents are not indicated.

Etch, rinse and lightly dry. LEAVE TOOTH SLIGHTLY MOIST. Apply Etch-Rite for 15 seconds.

Apply Embrace WetBond Pit & Fissure Sealant to the slightly moist tooth.

After curing, the margin is undetectable with an explorer.

EMBRACE™ WetBond™ Resin Cement

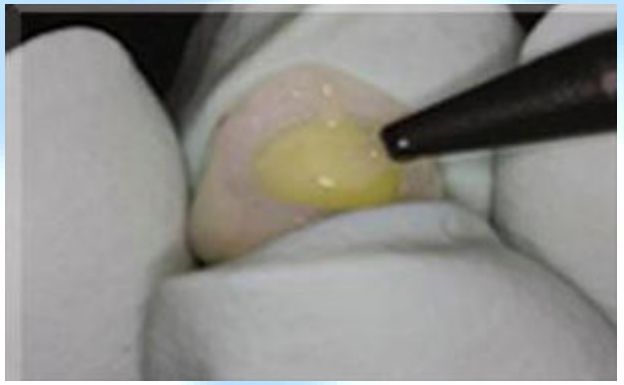
Dual Cure · Fluoride Releasing · Radiopaque
Bonds to the Moist Tooth

- Self-adhesive
- Self-etching to dentin
- No bonding agents required
- Moisture tolerant
- No sensitivity
- Film thickness: 12 microns
- Low solubility: 0.06%
- Automix syringe delivery

EMBRACE WetBond Resin Cement

Fewer Steps – Faster and Easier to Use

1. Prepare teeth to receive restorations. Leave teeth slight moist. No etching or bonding agents required.



2. Simply dispense cement directly into the restoration from the automix syringe.

3. Seat the restoration, light cure 1-2 seconds and remove excess cement.

4. The final result.

EMBRACE Restoration & PFM Repair Kit

5-in-1 Kit Solves Big Problems Fast

Primes · Protects · Opaques · Seals · Finishes · Polishes

- **Compatible with all restorative composites**
- **Eliminates metal and ceramic primers, silane and bonding agents**
- **Cures with all lights**

5 Products for all repairs

- **Kool-Dam**
- **Porcelain Etch Gel**
- **Embrace First-Coat**
- **Embrace Opaquer**
- **Embrace Seal-n-Shine**

Repairs Made Easy

1. Pretreatment photo of porcelain fractured off cuspid on 7-unit bridge.

2. Place Kool-Dam to protect gingiva and adjacent porcelain. Roughen metal with diamond or carbide.

3. Apply Pulpdent Porcelain Etch Gel (yellow) to porcelain for 2 minutes.

4. Apply Embrace First-Coat to dry metal and porcelain surfaces. Thin lightly with air and light cure.

5. Apply Embrace Opaquer to the metal surface and light cure.

6. Restore with any composite, finish and apply Embrace Seal-n-Shine and light cure.

EMBRACE™ First-Coat™

Adhesive Resin

STRONGER THAN SILANE

This unique resin primer bonds chemically and mechanically to etched or abraded ceramic and metal. Clear shade. Contains no solvents.

EMBRACE™ Esthetic Opaquers

20-Second Light Cure

- Masks out metals and discolored tooth surfaces.
- Spreads smoothly with a brush to form a thin film.
- Does not streak or separate.
- Mix shades to produce a wide range of color variations.
- Fast light cure.

5 Most Popular Shades

- Bleach White
- Off-White
- Yellow
- Pink
- Brown

EMBRACE™ Seal-n-Shine™

Light Cure Liquid Polish and Penetrating Resin

- **Finishes and Polishes Restorations**
- **Provides High Luster Finish**
- **Seals Margins Against Microleakage**
- **Saves Time**

- **Margin-free glaze produces high shine**
- **Moisture tolerant**
- **Compatible with all curing lights**
- **Eliminates final finishing and polishing**
- **Heals white lines**
- **Prevents marginal staining**
- **Provides smooth, durable protective finish**
- **Tough and resilient**
- **Cure clear - no yellow tint**
- **No solvents, no mixing**

EMBRACE Seal-n-Shine: Long Lasting – Wears for Years

A1. Etched enamel and composite restoration

A2. Shows case after applying and light curing Seal-n-Shine

B1. Bis-acryl temporary before Seal-n-Shine

B2. Bis-acryl temporary after application of Seal-n-Shine

C1. Etch surface

C2. Apply Seal-n-Shine

C3. Final after light cure

Seal-n-Shine

Dye Penetration Study

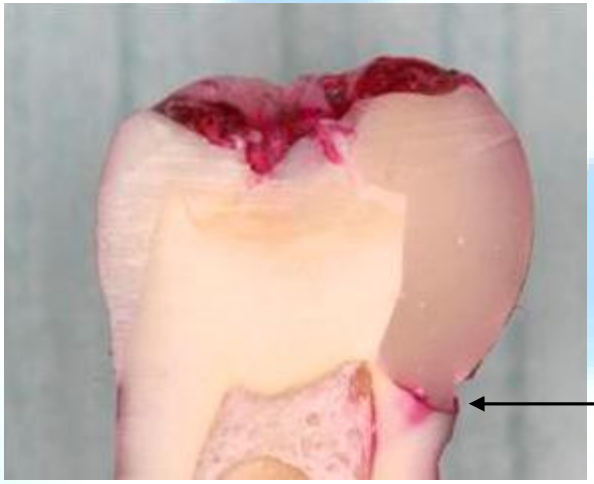
Seal-n-Shine penetrates and seals margins better than the competing products. Prevents microleakage.

Seal-n-Shine

No leakage at margin

Shows exceptional marginal seal against microleakage with Embrace Seal-n-Shine.

Competitor's surface sealant



Shows leakage at margin

Shows marginal leakage with leading competitor's surface sealant.

EMBRACE™ WetBond™ Class V

Cervical Restorative Resin

Light Cure · Fluoride Releasing · Radiopaque

A moisture tolerant resin ideally suited for cervical restorations where moisture control is most difficult.

- **Bonds in a moist field**
- **Self-etching to dentin**
- **Bonding agents are optional**
- **Tough, resilient, durable**
- **Cures with all lights**
- **4 Shades: A2, A3.5, B2, D2**

EMBRACE WetBond Class V

1. Shows 2 pre-0p Class V lesions

2. Enamel margins are beveled

3. Etch for 15 seconds

4. Apply Embrace Class V and light cure

5. Contour and trim

6. Apply Seal-n-Shine and light cure for final polish and finish.

7. The final result

EMBRACE™ WETBOND™

MOISTURE TOLERANT DENTAL RESINS
FOR THE MOIST ORAL ENVIRONMENT

PULPDENT CORPORATION