

# Why choose universal adhesives

3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive



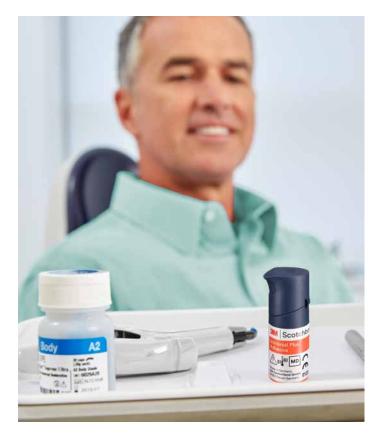
# Introduction

You have more options than ever when it comes to dental adhesives, but choosing the right product doesn't have to be complicated. Universal adhesives are proven to be strong, reliable and versatile, making the choice actually quite simple.

# You are busy, and so are your patients

It takes time to stay current with clinical research in order to provide the best care to patients. It takes time to vet new products while meeting the day-to-day demands of running a practice. And then there's the time cost when a restoration fails or a patient experiences post-operative sensitivity and must return for a repair – one that the you might not be able to bill.

These obligations make it especially important to find products and systems that maximize efficiency. There isn't one solution that can solve every challenge in dentistry, but there is a simpler way to bond: universal adhesives.



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# Universal adhesives: Simplicity, versatility and choice

Universal adhesives streamline the bonding process by reducing the number of products you and your staff have to stock. Using fewer products means fewer steps to memorize. And having fewer steps to memorize means less room for error.

#### In a word: Simplicity

Patients trust you to stay up to date on the latest innovations. After all, you perform life-changing work that makes a positive difference in their overall health, comfort and self-esteem.

This is where universal dental adhesives shine. The newest category in a long line of dental bonding adhesives, universal adhesives are designed to:

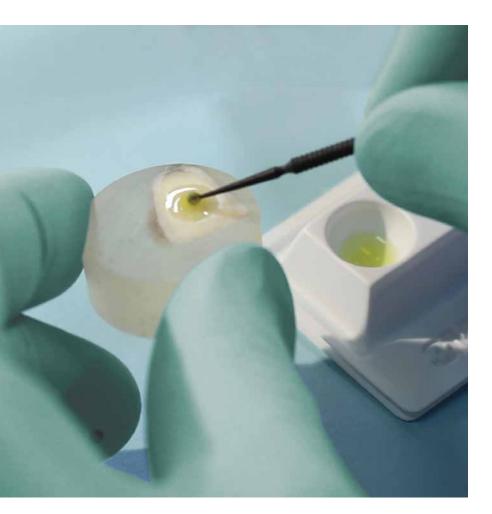
- Bond to all dental surfaces.
- Work in the etch mode of your choice: total-etch, self-etch or selective etch.
- Deliver strong bonds, even under challenging conditions.

- Work in both direct and indirect restorations.
- Serve as a universal primer.
- Offer all-in-one-bottle convenience, with no need for a separate primer.
- Result in virtually no post-operative sensitivity.

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### Earlier-generation adhesives: Multiple steps and bottles

Dentists describe the evolution of dental adhesives either by generation or by the number of steps they require. First-generation adhesives produced fairly unimpressive bond strengths and were improved upon through successive generations. Dental adhesives began to achieve much better results by the fourth generation, which, for some, is still considered the gold standard.

4th generation	5th generation	6th generation	7th generation	Universal
<ul> <li>Total-etch mode</li> <li>Multi-bottle system</li> <li>Three steps: etch/rinse, prime and bond</li> <li>Water solvent</li> </ul>	<ul> <li>Total-etch mode</li> <li>One bottle, combined adhesive and primer</li> <li>Two steps</li> <li>Mainly acetone or ethanol solvent</li> </ul>	<ul> <li>Self-etch mode</li> <li>Multi-bottle system</li> <li>Two steps</li> <li>Water-based</li> </ul>	<ul> <li>Self-etch mode</li> <li>Single-bottle system</li> <li>Single step</li> <li>Water and ethanol or acetone solvent</li> </ul>	<ul> <li>Total-etch, self-etch or selective etch mode</li> <li>One bottle</li> <li>One step</li> <li>Mainly ethanol solvent</li> </ul>

1. Roach, John. "Ancient Gem-Studded Teeth Show Skill of Ancient Dentist." National Geographic News. May 2009

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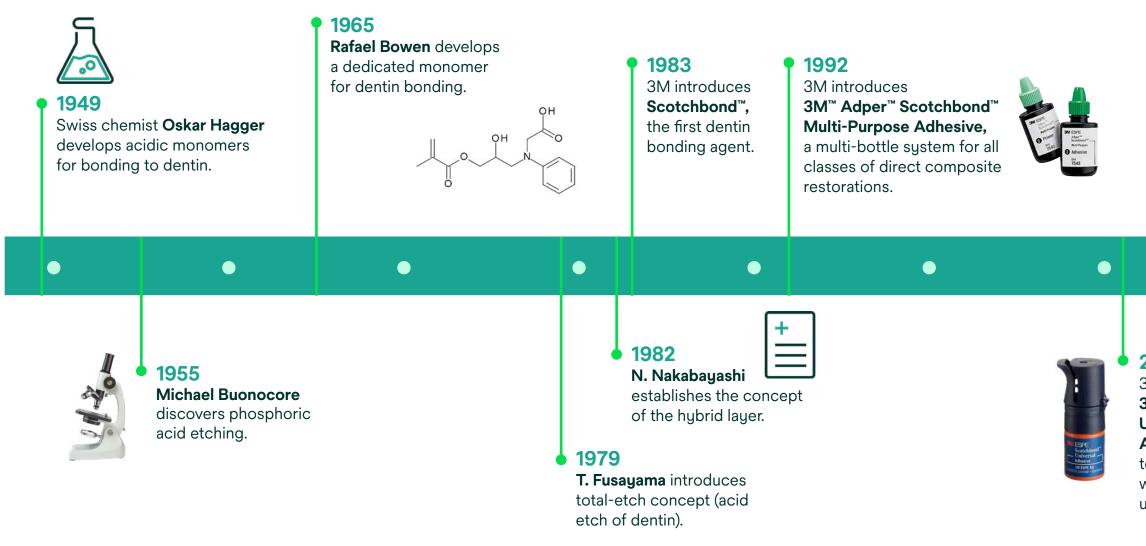


Adhesive dentistry has its roots in ancient times. The Maya developed methods to adhere jewels to teeth – just one example of how people have been working on dental bonding for centuries.<sup>1</sup>

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### Notable milestones in dental bonding



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#### 2018

A five-year clinical study demonstrates the strong bond strength of 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Adhesive.

#### 2024 **3M Health** Care becomes Solventum. a new healthcare company continuing its legacy of innovation.

#### 2011

3M introduces 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Adhesive

to simplify bonding with the first true universal adhesive.

#### 2020

3M introduces 3M<sup>™</sup> Scotchbond<sup>™</sup> **Universal Plus Adhesive and** 3M<sup>™</sup> RelyX<sup>™</sup> Universal Resin Cement

as a two-component system for virtually all direct and indirect indications.

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# An adhesive class for every dentist

Adhesive dentistry entered a new era with the arrival of universal adhesives. 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Adhesive arrived on the market in 2011 and has been joined in recent years by other universal adhesives, including the next generation 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive in 2020.

This new class of adhesives proves that sometimes less really is more. In one bottle, universal adhesives offer you the freedom to focus on other areas of your practice by giving you:

- The confidence to do your best work no matter the etching technique.
- A simple, streamlined system that lets you focus on providing the best patient care.
- The opportunity to master and consistently follow manufacturers' instructions for one product instead of having to learn and remember multiple sets of instruction.

• The benefit of building a reputation for offering patients the latest innovations in adhesive dentistry.

Universal adhesives are built to do more, on more surfaces and in more types of restorations than earlier generations — all in fewer steps. They contain key ingredients that essentially kick into gear when the appropriate conditions arise.

One example of a workhorse ingredient in many universal adhesives is the 10-MDP monomer, which binds the calcium of the tooth to composite resin, improves stability and bonds to metal and nonglass ceramics. Another example is an ethanol- and water-based solvent, which helps reduce postoperative sensitivity.

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#### Why feel confident with a universal adhesive?



Some dentists might be satisfied with the performance of a fourth- or fifth-generation adhesive system, even though its application may require additional steps.

After all, operating a successful dental practice requires delivering consistent, quality results. Keeping up to date on new products and their features while running a business is particularly challenging.

Dentists sometimes default to their familiar choices rather than take a chance on new products. Although earlier-generation adhesives have a longer clinical history, the body of research on universal adhesives is growing.

Universal adhesives have established a strong track record, both in clinical studies and in dental practices around the world.

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3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Adhesive is the most-researched universal adhesive with over 500 peer-reviewed publications. And 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive is based on the same chemistry to also ensure a strong, reliable bond even under challenging conditions.

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## Clinical evaluation shows universal adhesives perform reliably

Consider the findings of a two-year retrospective clinical evaluation of a universal adhesive. In a 2023 study, THE DENTAL ADVISOR found that 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive achieved a 100% clinical performance rating at a 2-year recall.

This study reviewed 2,005 composite, crowns and veneer restorations bonded with Scotchbond Universal Plus Adhesive, evaluating retention, lack of postoperative sensitivity, and lack of marginal discoloration. No restorations using Scotchbond Universal Plus Adhesive debonded during the two years of service, although there were three anterior restorations that had to be replaced because of chipping due to bruxism. No patients reported any long-term sensitivity and no restorations showed signs of marginal staining.

This analysis validates previous studies of both Scotchbond Universal Plus Adhesive and its predecessor, 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Adhesive, which have shown the effectiveness and versatility of these universal adhesives.

"3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive allows us to stock one product to bond anything in the office."

THE DENTAL ADVISOR, consultant

"3M Scotchbond Universal Plus Adhesive (2-Year Retrospective Report) - The Dental Advisor," Vol.41 No. 04 July/August 2024, page 15.

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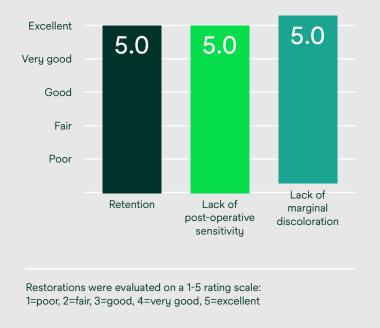
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#### **Results of Scotchbond Universal Plus Adhesive Plus at 2-years**



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### Universal adhesives perform well in real-world conditions



#### Self-etch or total-etch, wet or dry

Universal adhesives stand out due to their ability to establish a strong and reliable bond independent of the application mode. 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive was designed to deliver those strong bonds even in difficult clinical situations where complete isolation from moisture is difficult. Both self-etch and total-etch techniques have been shown to achieve very high sheer bond strength (>30 MPa) across different moisture levels (wet, moist or dry). Within each etching technique, bond strength was statistically the same across all three moisture levels.<sup>1</sup>

#### Saliva tolerance

1. Schuckar, M., C. Thalacker, M.G. Grupp, H. Loll, J. Madden, and B. Craig. "Moisture Tolerance of a Universal Adhesive." Journal of Dental Research 101 (Spec Issue A), no. 0988 (2022).

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Moisture is a major consideration in adhesive dentistry and saliva interferes with the bonding process. While it's best to take steps to avoid saliva contamination. Scotchbond Universal Plus Adhesive has been shown to hold up to modest levels of saliva contamination as well as to high relative humidity. An in vitro study of bovine incisors found that saliva contamination prior to the application of Scotchbond Universal Plus Adhesive had no negative impact on bond strength for both enamel and dentin in both self-etch and total-etch modes.<sup>1</sup>

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# Strong bonds matter

There is no substitute for proven, effective adhesives designed to provide long-term results.

In the end, it's pretty straightforward: The success of dental restorations depends on the strength of their adhesive bonds. When bonds fail, both dentists and patients suffer the consequences.



#### For patients, failed restorations can result in:

- Post-operative sensitivity to heat, cold, or when biting.
- Inconvenient return visits for repair or replacement.

For dentists, failed restorations:

- Risk damaging their patients' confidence in their care and treatment.
- Cost billable chair time when failed bonds lead to a repair or replacement.



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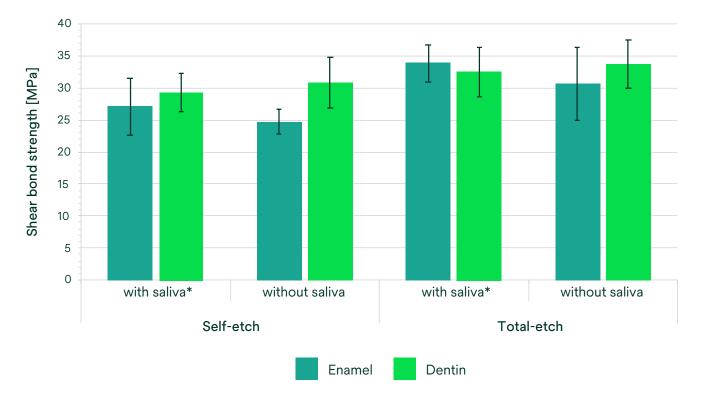
### Strength you can't see

Dental adhesives play an essential role in the success of dental restorations but the integrity of their bond strength isn't always easily confirmed by sight or touch. 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive, however, features a yellow tint in the uncured state to facilitate placement. Upon light cure, the yellow photoinitiator is bleached to be nearly colorless.

A single drop of adhesive, with its built-in chemistry, is literally the glue that keeps restorations in place. Given the importance of dental adhesives in your practice, having data from clinical studies provides added confidence when you are considering trying a new product.

Choosing a moisture-tolerant adhesive like Scotchbond Universal Plus Adhesive, which forms strong bonds in self-etch and total-etch modes at various moisture levels, gives you confidence in situations where complete isolation from saliva or moisture is difficult.

#### Shear bond strength of Scotchbond Universal Plus Adhesive with and without saliva contamination



\*Saliva was applied, slightly blotted with a paper towel, then 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive was applied according to the Instructions for Use.

Source: 3M internal data

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# Universal adhesives pack a lot into each drop

It's understandable that dentists become comfortable with a particular adhesive system for a given restoration. With some dental adhesives, opting for a total-etch technique can entail a three-step process, requiring first etching and rinsing, then applying a primer, and finally, applying the adhesive. Meanwhile, stocking multiple adhesive products for direct and indirect restorations adds cost and complexity to your practice. The newest universal adhesives allow you to streamline your workflows with a true one-bottle system for all adhesive applications.

### Simplify your practice with 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive

Scotchbond Universal Plus Adhesive was specifically designed to pack a powerhouse of chemistry in one bottle. It is tailored to:

- Work in all etching modes: total-etch, self-etch and selective etch.
- Perform in both direct and indirect restorations.
- Offer full dual- and self-cure compatibility without the need for a separate dual-cure activator.
- Exhibit high performance on moist and dry substrates.
- Bond and seal caries-affected dentin to support minimally invasive preparations.
- Support a BPA derivative-free workflow.



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A multitasker by design, Scotchbond Universal Plus Adhesive doesn't need a separate primer to bond well with all dental surfaces, including:

- Enamel
  - Dentin
- Glass ceramic
- Zirconia
- Alloys
- Composites

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### Streamline your inventory

While using multiple adhesive systems may seem to guarantee flexibility – and perhaps better outcomes – this approach can be costly due to more complex inventory management, scrapping expired products, confusion regarding the proper use of each product and additional staff training.

Simplifying your bonding procedure with a single universal adhesive for all direct and indirect bonding applications delivers multiple benefits, especially with a product like 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive that does not need any separate silanes, primers or dual cure activators:

- More predictable workflows and results
- Cost-effectiveness
- Efficient procedures
- Reduced waste and chair time
- Streamlined inventory management

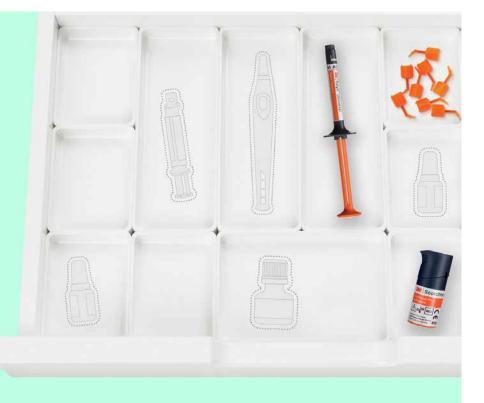
Scotchbond Universal Plus Adhesive serves as a universal primer for all materials and eliminates the need to stock dedicated zirconia alloy and silane primers. It is designed to work with 3M<sup>™</sup> RelyX<sup>™</sup> Universal Resin Cement as a true two-component system, enhancing the cement's bond strength to all substrates, including zirconia and glass ceramics. Plus, the adhesive is cured by the cement, so no light cure or separate dual-cure activator is needed.

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# Bottle and unit dose features of 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive



Even the best adhesive needs a well-designed delivery system to make it easy to use. Comfort and efficiency are evident in Scotchbond Universal Plus Adhesive, which has:

- A flip-top cap that can be used with one hand.
- A translucent orange bottle that allows you to see the product – unlike some adhesives, which can be hard to see in the bottle – while shielding the photoinitiator from light.
- A streamlined vial with a smooth surface and • edges for easy excess removal by wiping.

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• An easy-to-use unit dose delivery for efficient hygiene management.

• Stable chemistry, so no refrigeration is needed.

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# Reduced post-operative sensitivity: Your patients will thank you

There are many reasons to consider switching to a universal adhesive, but patient satisfaction may be the best reason of all. Universal adhesives result in a very low incidence of post-operative sensitivity.

A key benefit, thanks to the chemistry of 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive, is that the water- and ethanol-based solvent dramatically reduces the incidence of post-operative sensitivity to almost zero. The water in the solvent system rehydrates collagen, which can become overly dry when other types of solvents evaporate. Overdrying leads to sensitivity.

A 3M field evaluation in the European Union of 120 clinicians measured the incidence of post-operative sensitivity in more than 8,500 direct applications of 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive.<sup>1</sup>

The findings showed virtually no post-operative sensitivity, with an incidence rate of only 0.2% across all etching techniques.

In another field evaluation, 309 clinicians in the European Union and United States used Scotchbond Universal Plus Adhesive in over 20,000 applications. 99% of participants reported the same or lower incidence of post-operative sensitivity than their preferred adhesive.

1. R. Guggenberger, et al., "Post-operative Sensitivity with a New Universal Adhesive." IADR, Abstract #186, Iguaçu Falls, Brazil (June 2012).

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### Dentin-like radiopacity to reduce X-ray misdiagnosis

Over 50% of dentists report that they need to interpret at least one questionable X-ray per day with radiolucency under an existing restoration.\* It can be difficult to determine whether this radiolucency is caused by caries, marginal gaps or voids, or a thick layer of a non-radiopaque adhesive.

One way to address this problem is to use a radiopaque adhesive. 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive is the **first universal adhesive with dentin-like radiopacity helping reduce the risk of X-ray misdiagnosis and invasive overtreatment.** 

Traditionally, adhesives have achieved radiopacity by adding inorganic fillers that can create a pasty consistency and undesirable handling. Scotchbond Universal Plus Adhesive takes a new approach thanks to the development of a novel, crosslinking monomer. This breakthrough in adhesive chemistry allows Scotchbond Universal Plus Adhesive to feature radiopacity while maintaining low viscosity and without the need for shaking before each use.

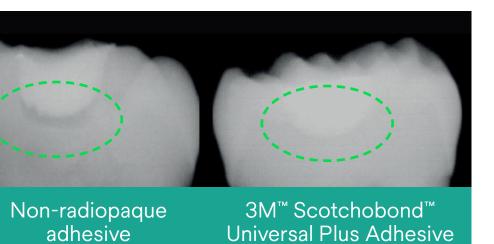
Internal data: Radiopacity of an Experimental Universal Adhesive, H. Loll, O. Brinkmann, B. Anich, K. Dede, B. Craig, A.S. Abuelyaman, C. Thalacker, J Dent Res 99 (Spec Iss A): No. 757, 2020.

"Radiolucent adhesive pooling underneath a restoration doubles the risk of restoration replacement."

**Dr. John O. Burgess** University of Alabama, USA

\*Survey among 309 general dentists from Europe and USA.

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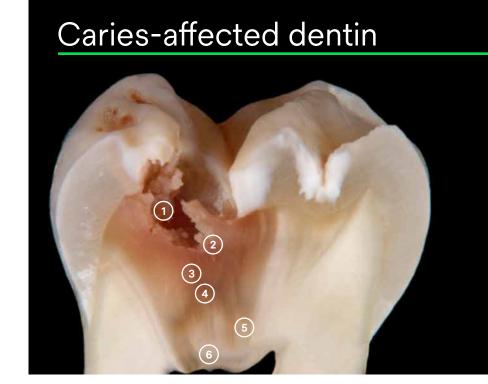
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# Bonds and seals caries-affected dentin to help preserve tooth structure

Over time, opinions on when to stop excavating have changed considerably. More than 100 years ago, G. V. Black recommended "extension for prevention." In the era of minimally invasive dentistry, the philosophy is "prevention of extension".<sup>1</sup> Minimally invasive preparation guidelines promote conserving as much viable tooth structure as possible and may recommend preserving caries-affected dentin.

3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive is wellsuited to minimally invasive preparations because it has the same high bond strength to caries-affected dentin as to sound dentin. Plus, it seals caries-affected dentin by forming a well-defined, void-free hybrid layer, which helps prevent secondary decay.



Sections of carious lesion. Image courtesy of Prof. L. Hilgert and Prof. S. Leal, University of Brasilia, Brazil

1. Burke, F.J. Trevor. "From extension for prevention to prevention of extension: (Minimal intervention dentistry)." Dental Update vol. 30, no. 9 (November 2, 2003): 492–502.

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### **Infected Dentin** 1 - Necrotic zone 2 - Contaminated zone **Affected Dentin** 3 - Demineralized zone 4 - Translucent zone 5 - Sound dentin 6 - Tertiary dentin

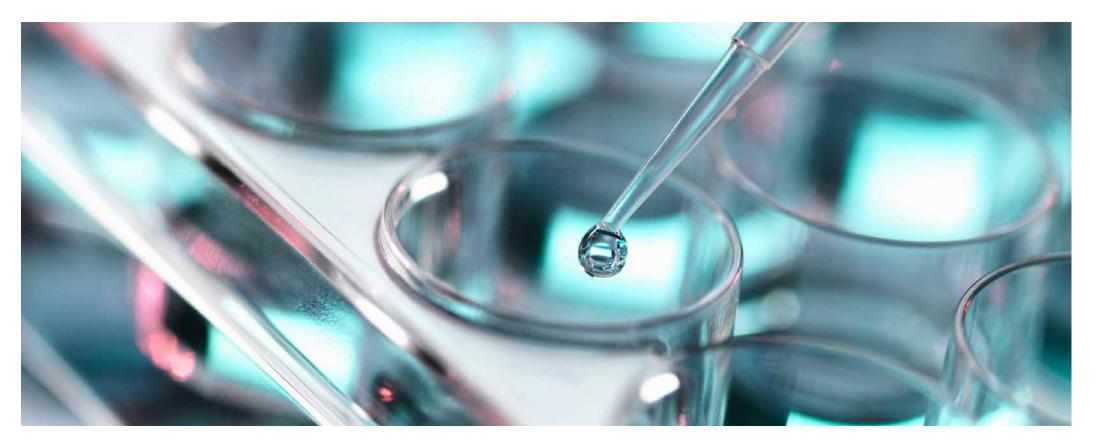
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# The science of a great bond

There is a science to what makes 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive a versatile, one-bottle solution: VMS.

- Vitrebond<sup>™</sup> Copolymer lends moisture tolerance, guaranteeing strong bonding with moist or dry dentin in the total-etch technique.
- MDP Monomer offers several benefits: It enables self-etch application, the ability to bond with zirconia and alumina, and stability requiring no refrigeration.
- **Silane** in the adhesive formula allows for gold standard adhesion to glass ceramic without the need for an extra silane primer.



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# Well-defined hybrid layers are the key to forming strong bonds to dentin

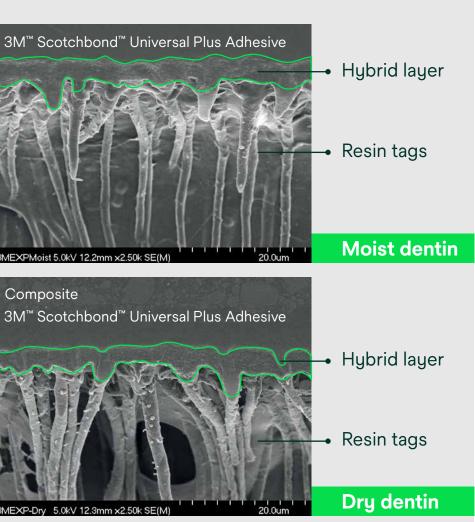
Bonding to dentin is more challenging than bonding to enamel due to its higher organic content and porosity. In 1982, N. Nakabayashi introduced the concept of the hybrid layer – the resin-infiltrated part of the dentin immediately beneath the adhesive layer. Acid etching the dentin will demineralize the dentin surface, allowing the adhesive resin to infiltrate the residual collagen and form a hybrid layer.

A well-defined void-free hybrid layer is a prerequisite for forming strong, long-lasting bonds to dentin and reducing the probability of post-operative sensitivity. A scanning electron microscopy study confirmed that **3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive** forms a well-defined hybrid layer without exposed collagen. This ability to infiltrate even the collapsed collagen on dried, etched dentin helps explain its high bond strength under varying moisture levels, which in turn means less technique sensitivity.

When you can trust your adhesive to create a sound, consistent hybrid layer in all conditions, under all adhesive techniques, you can feel confident that your restorations will stay in place.









**Source:** SEM study of hybrid layer formation on etched dentin J. Perdigao, University of Minnesota, USA, report to 3M, 2019. (J. Perdigao: Ultramorphological evaluation of the interaction of an experimental universal adhesive with dentin, Report to 3M, 2019)

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# Tips for success with 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive

Don't let uncertainty about how to work with universal adhesives keep you from enjoying the simplicity and versatility they offer.

# Follow the manufacturer's instructions.



Scrub for 20 seconds. This allows the adhesive to penetrate the tooth and optimizes bond strength.

Evaporate the solvent using a gentle air stream until the adhesive layer doesn't move. This takes about **5 seconds.** 

Light cure for 10 seconds.

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#### 2. Use a rubber dam.

A rubber dam helps protect teeth from humidity. Even when access makes it hard to isolate humidity, Scotchbond Universal Plus Adhesive is designed to work well in both moist and dry conditions, particularly with etched dentin.

#### 3. Etch the enamel.

Scotchbond Universal Plus Adhesive bonds well to dentin in both the total- and self-etch modes, but for enamel, etching will maximize the bond strength.



# Universal adhesives in practice

"The benefit for me with universal adhesives is you have virtually zero sensitivity ... That's why I switched.

Occasionally, I would have sensitivity with an etch-and-rinse prior to the universal adhesives. It all comes down to technique. These are a little bit more forgiving if you are not etching the dentin, and they give you great bond strength."

Dr. Robert Margeas University of Iowa College of Dentistry, USA



"I wanted to have one adhesive that works with both [direct and indirect restorations] and with which I was comfortable and used daily. Instead of changing instructions every time, I want to have one set of instructions that I use properly."

**Dr. Marcos Vargas** University of Iowa College of Dentistry, USA



"It's all just in one simple bottle. And we're getting the same results, and predictive results, every time."

**Dr. Michael Snider** Greenwood, South Carolina, USA

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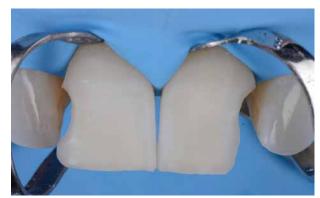
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### Reinforcing esthetics and structure by additive dentistry

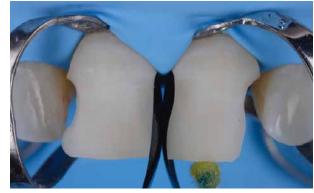
Clinical case by Dr. Jordi Manauta, Italy

The patient presented with failed restorations, secondary caries, marginal discoloration and wearing of the incisal edges and buccal surface. 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive and 3M<sup>™</sup> Filtek<sup>™</sup> Universal Restorative were used to restore the upper central incisors, adding material to the buccal enamel to make the tooth thicker and add strength to the dental structure. This approach offers the possibility of hiding margins and defects, improving the shape of the teeth and offering a very esthetic outcome.





2. After isolation with rubber dam.



4. Application of the adhesive, rubbing in for 20 seconds, air-drying for 5 seconds.



5. Light-curing for 10 seconds.



7. Placement of composite material.



8. Polishing with fine grit rubber adhesive 3M<sup>™</sup> Sof-Lex<sup>™</sup> Spiral Wheel. Afterwards, an ultra fine spiral (pink) was applied for high gloss.

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3. Selectant enamel etch - etchant gel was supplied for 15 seconds, rinsed and lightly dried.



6. Adhesive layer after light curing.



9. Final situation.

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# Class II filling on upper first pre-molar

Clinical case by Prof. Dr. Alberto Ferreiroa, Spain

Patient came with light pain on the left upper side and the clinical evaluation showed the presence of caries on the distal side of the left first upper premolar which was confirmed by the periapical X-ray. The treatment plan consisted of a Class II, OD (occluso-distal) restoration using 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive and 3M<sup>™</sup> Filtek<sup>™</sup> Universal Restorative, shade A2. After total isolation with a rubber dam, the caries was removed, the adhesive was applied following manufacturer's instructions and the composite material was placed and polished using 3M<sup>™</sup> Sof-Lex<sup>™</sup> Polishing System.



1. Initial situation.



2. Access to caries lesion.



4. Selective enamel etching.



5. Application of Scotchbond Universal Plus Adhesive followed by light-curing for 10 seconds.



7. Filling complete.



8. Polishing wtih 3M<sup>™</sup> Sof-Lex<sup>™</sup> Spiral Wheels

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3. After excavation.



6. Build-up of distal ridge with Filtek Universal Restorative.



9. Final situation.

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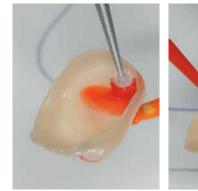
## Selective etch adhesive bonding of an IPS e.max<sup>®</sup> CAD partial crown

Clinical case by Prof. Dr. Gunnar Reich, Germany

A 52-year-old female patient presented with a large composite filling and a fractured cusp on the endotontically treated tooth 26. The tooth was restored with a lithium disilicate glass ceramic partial crown cemented with 3M<sup>™</sup> RelyX<sup>™</sup> Universal Resin Cement and 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive in the selective etch adhesive technique.



1. Initial situation and preparation.



**2.** HF (hydrofluoric acid) etching of bonding surface and priming with Scotchbond Univeral Plus Adhesive as silane.



4. Application of RelyX Universal Resin Cement.



5. Seated partial crown with cement excess.



8. Final situation.



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7. Excess clean-up with scaler.

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**3.** Selective enamel etch with 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Etchant and application of Scotchbond Univeral Plus Adhesive.



6. Tack-cure of cement excess.



9. Final situation buccal view.

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### Total-etch adhesive bonding of two glass ceramic veneers

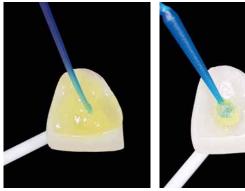
Clinical case by Dr. Rafał Mędzin, Poland

A patient with a history of agenesis of lateral incisors received orthodontic treatment and six feldspathic veneers on the upper anteriors. Eight years later, the veneers on teeth 11 and 21 broke in a sport accident and were temporarily repaired with 3M<sup>™</sup> Filtek<sup>™</sup> Supreme Ultra Universal Restorative.

Six months later the old veneers were removed and new feldspathic veneers were placed with 3M<sup>™</sup> RelyX<sup>™</sup> Universal Resin Cement and 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive using the total-etch technique.



1. Initial situation: Veneers on teeth 11 and 21 repaired with Filtek Ultimate Universal Restorative.



**4.** HF (hydrofluoric acid) etching of bonding surface and priming with Scotchbond Universal Plus Adhesive as silane.



2. Palatial view showing incisal edge crack of veneer on tooth 11.



5. Total enamel etch.



7. Application of RelyX Universal Resin Cement (shade translucent).



8. Initial attachment with pinpoint light guide.

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3. Final preparations.



6. Air-drying of Scotchbond Universal Plus Adhesive after application.



9. Both veneers in place after clean-up. Note the perfect marginal integration of the ceramic and enamel.

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#### Chapter 7:

## The era of universal adhesives

Adhesive dentistry has gone through many evolutions since its inception, and with each change, we've found new ways to simplify processes, solve pain points, and help give our patients the best results possible.

Universal adhesives are a clinically proven class of dental adhesives that provide simplicity, versatility and reliability.

#### Consider universal adhesives if ...

- ✓ You want to be efficient.
- ✓ You want to deliver a quality, strongbonded restoration that will give your patient virtually no chance of post-operative sensitivity.
- ✓ You want to pare down excess inventory.

✓ You want to be able to bond to any dental surface, choose any etching technique and work on direct and indirect restorations with a single one-bottle system.

Yes, change can be hard. But it can also bring some pretty impressive benefits.

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Learn more about the advantages of universal adhesives by visiting the 3M<sup>™</sup> Scotchbond<sup>™</sup> Universal Plus Adhesive website.

3M.com/ScotchbondPlus

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