

# Adhesion Dramatically Simplified

Scotchbond™ Universal Adhesive offers exceptional bond strength to both dentin and enamel with virtually no postoperative sensitivity.

Until now, dentists have had to juggle multiple adhesive systems and sort through numerous bottles to select the right adhesive product for a given indication. However, with the introduction of Scotchbond™ Universal Adhesive from 3M ESPE, the adhesive process is greatly simplified. This single-bottle adhesive has a forgiving technique that offers versatile solutions for both direct and indirect restorations. Built on 3M ESPE's trusted bonding legacy, Scotchbond Universal adhesive gives dentists an easy-to-use, single-bottle system that provides uncompromising results for all surfaces in total- or self-etch mode.

Scotchbond Universal adhesive offers a unique combination of total- and self-etch properties with consistent and reliable performance in all adhesive techniques. Whether used for a direct or indirect procedure or on dentin or enamel, Scotchbond Universal adhesive provides uncompromising performance and bond strength. This first-of-its-kind adhesive bonds methacrylate-based restorative, cement, and sealant materials

to dentin, enamel, glass ionomer, and various indirect restorative substrates (eg, metals, glass ceramics, alumina, and zirconia) without requiring an extra primer step. Additionally, the incorporation of 3M ESPE's proprietary Vitrebond™ Copolymer into the product enhances its technique tolerance and ease of use, giving it high moisture tolerance to allow consistent bonding to both moist- and dry-etched dentin.

## Benefits

The product's primary use is with light-cured materials; however, when used in conjunction with a separate activation solution, Scotchbond Universal DCA Dual Cure Activator, it can also bond to self- or dual-cure composite and cement materials that rely on self-cure polymerization.

RelyX™ Ultimate Adhesive Resin Cement has an integrated dark-cure activator designed specifically to work with Scotchbond Universal adhesive. This eliminates the need for a separate activator. For maximum efficiency, this combination can be used to place Lava™ Ultimate Restorative, which itself enables a simplified process, with no firing and easy polishability.

## Self-Etching

The Scotchbond Universal adhesive chemistry uses phosphorylated monomers in an aqueous solution, thus providing acidity and allowing the adhesive to bond to dentin and cut enamel without a separate phosphoric acid-etching step. The self-etching simplifies the technique and provides protection to the dentin surface to reduce the potential for postoperative sensitivity.

## Selective Etching

Scotchbond Universal adhesive has a pH of 2.7, making it a mild self-etch adhesive. With the higher pH of mild self-etch adhesives compared to phosphoric acid, some dentists still prefer to use a phosphoric acid-etch on the cut and uncut enamel surfaces. This is commonly referred to as “selective” enamel etching. When incorporating the “selective enamel etch” with a self-etch adhesive, the etchant is isolated to the enamel, leaving the dentin intact.

Some self-etch adhesives may have reduced performance when bonding to etched dentin surfaces. However, the carefully balanced formula of Scotchbond Universal adhesive, which contains the Vitrebond copolymer,

hydroxymethylmethacrylate (HEMA), and water, allows for high and consistent bonding to etched dentin surfaces, even if the dentin surface is accidentally dried.

## Total-Etching

The total-etch approach allows for a thicker hybrid layer to be formed. However, this adhesion method can be technique-sensitive for fifth-generation adhesives, because the dentin surface must be kept moist after etching to prevent the collapse of the unsupported collagen fiber network.

The chemistry of Scotchbond Universal adhesive includes water, HEMA, and the Vitrebond copolymer, allowing it to provide high and consistent bond performance to etched enamel and dentin in the total-etch technique. The product's unique chemistry provides consistent performance to etched dentin—whether it is kept moist, as recommended, or if it is inadvertently dried.

## Technique

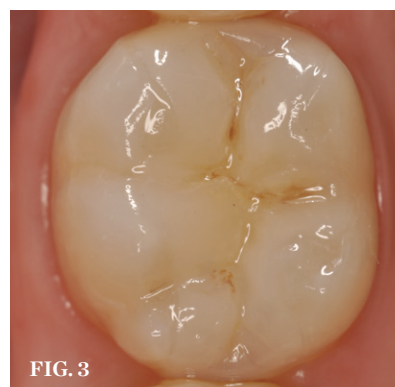
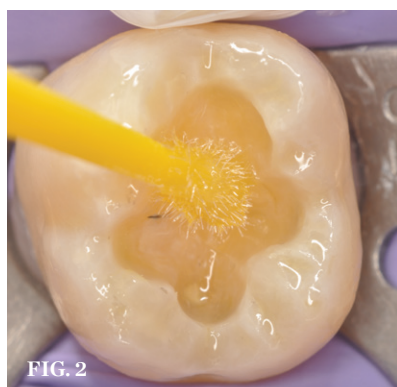
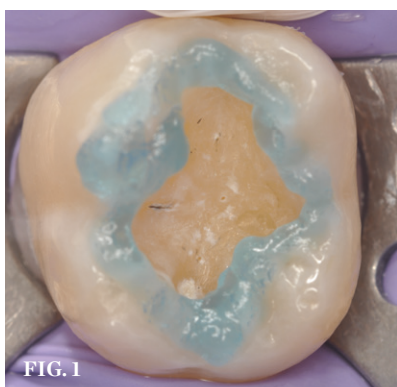
After tooth preparation, phosphoric acid is applied to the enamel for 15 seconds. The tooth is rinsed and lightly dried, and then adhesive is applied to the surface and rubbed in for 20 seconds. The area is then air-dried for 5 seconds and light-cured for 10 seconds, after which a composite restorative can be used to complete the case. For a self-etching procedure, dentists may simply skip the acid-etching and follow the procedure as stated above. However, if a total-etch procedure is still preferred, simply etch the enamel and dentin simultaneously and apply the adhesive as stated above. With this simple application process, Scotchbond Universal adhesive performs reliably, regardless of user technique.

### FOR MORE INFORMATION, CONTACT:

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## Disclaimer

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**SELECTIVE ETCH APPLICATION (1.)** Etchant is applied to enamel surfaces for 15 seconds. **(2.)** Adhesive is rubbed in for 20 seconds, air-dried for 5 seconds, and light-cured for 10 seconds. **(3.)** The final result. Photographs courtesy of Dr. Mario de Goes.