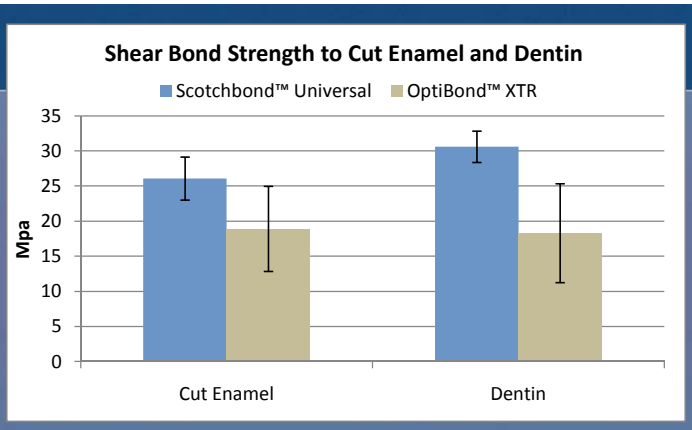
Competitive Product Comparison

Scotchbond™ Universal Adhesive (3M ESPE)

OptiBond™ XTR (Kerr)

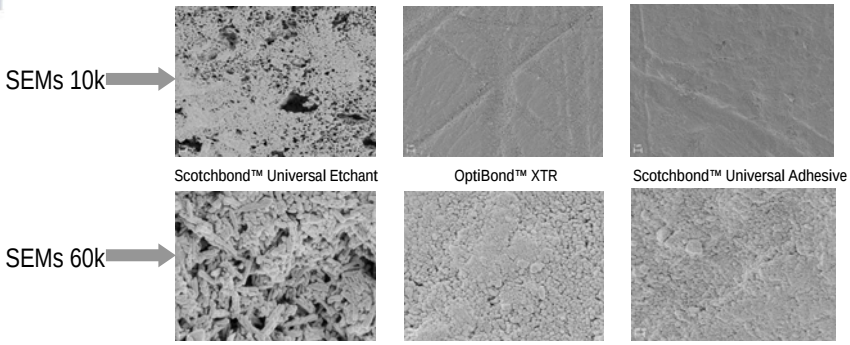
Results

- The cut enamel and dentin bond strengths of Scotchbond Universal adhesive are statistically higher than OptiBond XTR.
- The enamel etch patterns of Scotchbond Universal adhesive and OptiBond XTR are similar.
- Scotchbond Universal adhesive has a 2 year shelf life at room temperature. OptiBond XTR requires refrigeration upon receipt.
- Scotchbond Universal adhesive exhibits faster direct application times than OptiBond XTR.
- Scotchbond Universal adhesive offers more indications and requires fewer bottles for the majority of indications.
- Scotchbond Universal adhesive has virtually no post-operative sensitivity in the self-etch and total-etch techniques.



Bond Strength

The bond strength of Scotchbond Universal adhesive and OptiBond XTR adhesive were determined using a Notched Edge Shear Bond Strength test method on bovine cut enamel and dentin. The cut enamel and dentin bond strengths of Scotchbond Universal adhesive are statistically higher than OptiBond XTR.



Scanning Electron Microscopy Images

Phosphoric acid etchant, OptiBond XTR, and Scotchbond Universal adhesive were applied to uncut enamel. These SEMS show a distinct etch pattern with the phosphoric acid etch and a similar lack of an etch pattern with both OptiBond XTR and Scotchbond Universal.

Dentists have relied on the high enamel bond integrity provided by phosphoric acid to prevent microleakage, marginal degredation and staining. The acidity of self-etch adhesive systems varies significantly and can be significantly less than that of phosphoric acid. This has clear advantages on dentin, however on uncut enamel surfaces, this reduced acidity leads to a less pronounced etch pattern compared to phosphoric acid. For this reason, Scotchbond Universal adhesive and most other self-etch adhesives systems recommend to incorporate a separate phosphoric acid etch on uncut enamel surfaces. However, OptiBond XTR does not make this common recommendation.

Source: 3M ESPE Internal Data

3M ESPE

	Scotchbond™ Universal Adhesive by 3M ESPE	OptiBond™ XTR Two Component Self-Etch Adhesive By Kerr
Indications	Number of bottles/components (A=Adhesive, P=Primer, S=Silane, D=Activator, E=Etchant)[1,2]	
Uncut enamel	E A	P A
All classes of fillings with light curing composite or compomer materials	A	P A
Sealing of cavities prior to cementation of amalgam restorations	A	P A **
Root surface desensitization	A	P A **
Protective coating for glass ionomers	A	Not indicated
Bonding of pit and fissure sealants	A	Not indicated
Intraoral repair of composite or compomer restorations	A	P A **
Veneer Cementation	E A	S P A
Bonding of dual cure and self cure composite and core build up materials and cements	A + D (for self cure only)	P A
Intraoral repair of porcelain fused to metal and all-ceramic restorations	A	S P A
Sealing of cavities and preparation of tooth stumps prior to temporary cementation of indirect restorations	A	P A **
Cementation of endodontic posts	A D	P A
Primer for indirect restorations	A	Not indicated
Direct Light Cure Application Technique	1. Apply ADHESIVE with scrubbing motion for 20 seconds. 2. Air thin for 5 seconds 3. Light cure 10 seconds.	1. Apply PRIMER and scrub for 20 seconds 2. Air thin for 5 seconds 3. Shake ADHESIVE bottle briefly. 4. Apply ADHESIVE with light brushing motion for 15 seconds 5. Air thin for 5 seconds 6. Light cure for 5 or 10 seconds (depending on the light)
Storage Conditions	No refrigeration required. Store at 2-25°C / 36-77°F	Refrigerate upon receipt, between 2-8°C (36-46°F)
Packaging	5ml bottle, 0.11ml unit dose	5ml each bottle, 0.18ml each Unidose

*Information obtained from Kerr Optibond XTR website and Instructions for Use **Indicated, however insufficient information provided in instructions for use to determine how many more components may be required.

[1.] Components only – not intended to illustrate order of use [2.] When used with manufacturer's recommended cement system

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Dental Products

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