ONLINE ISSN : 1881-1361
PRINT ISSN : 0287-4547

Dental Materials Journal
Vol. 27 (2008) , No. 2 p.266-272

Effects of One-year Storage in Water on Bond Strength of Self-etching Adhesives to Enamel and Dentin

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(Received October 10, 2007)
(Accepted October 29, 2007)

Abstract:
The aim of this study was to compare the bond strengths of three self-etching materials during one year of storage. Clearfil SE Bond (SE), Clearfil Protect Bond (PB), and Clearfil Tri-S Bond (TS) were used for bonding to dentin and enamel according to manufacturer's instructions. Microshear bond strength values were measured after 24 hours, six months, and one year. Two-way ANOVA showed that the interaction of material type and storage time was significant for dentin. At baseline, SE had the highest bond strength to dentin. There were no significant changes in bond strength for each material during the storage period, except for PB which showed increased bond strength to dentin after one year. All materials performed reliably after one year. However, the antibacterial and fluoride-releasing effects of PB would further contribute to the long-term clinical benefits of this material.

Key words:
Microshear bond strength, Self-etching, Durability

doi:10.4012/dmj.27.266
JOI JST.JSTAGE/dmj/27.266