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ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

**Dental Materials Journal**

Vol. 27 (2008) , No. 3 p.376-385

[\[Image PDF \(723K\)\]](#) [\[References\]](#)**Influence of Polymerization Mode on Degree of Conversion and Micropush-out Bond Strength of Resin Core Systems Using Different Adhesive Systems**[Isil CEKIC-NAGAS<sup>1\)</sup>](#), [Gulfem ERGUN<sup>1\)</sup>](#), [Pekka K. VALLITTU<sup>2\)</sup>](#) and [Lippo V.J. LASSILA<sup>2\)</sup>](#)

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(Received July 20, 2007)

(Accepted November 13, 2007)

**Abstract:**

The aim of this study was to evaluate the influence of different polymerization modes on degree of conversion and micropush-out bond strength of dual-polymerized resin core systems to dentin by using two different adhesive systems. Two resin core systems, Rebilda DC and Build-It FR, were used in combination with total-etch (Adper Scotchbond Multi-Purpose) and self-etch (Clearfil SE Bond) adhesive systems. After treatment of dentin surfaces, resin core systems were applied into the cavities and subjected to different polymerization modes as follows: (1) chemical polymerization; (2) dual polymerization with standard mode of LED (Elipar FreeLight 2 LED); or (3) dual polymerization with exponential mode of LED. The cavities (n=10 per group) were tested in a universal testing machine. Degree of monomer conversion (DC%) was determined by Fourier transform infrared spectroscopy (n=5 cavities per group). ANOVA revealed that resin core (p=0.002), adhesive system (p<0.001), and polymerization mode (p<0.001) had significant effects on bond strength values. The degree of conversion for resin cores decreased significantly (p<0.001) when only chemical polymerization was employed.

**Key words:**[Polymerization mode](#), [Resin core](#), [Adhesive system](#)

To cite this article:

Isil CEKIC-NAGAS, Gulfem ERGUN, Pekka K. VALLITTU and Lippo V.J. LASSILA.  
Influence of Polymerization Mode on Degree of Conversion and Micropush-out Bond  
Strength of Resin Core Systems Using Different Adhesive Systems . Dent. Mater. J. 2008; 27:  
376-385 .

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doi:10.4012/dmj.27.376

JOI JST.JSTAGE/dmj/27.376

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