

0332 Crown Retention and Flexural Strength with Nine Provisional Cements

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While crowns are being fabricated, provisional restorations are worn to protect the repaired tooth and maintain its position. These provisional restorations are cemented with varying strength cements. **Objectives:** This study measured the retention provided by 10 provisional cements and correlated the retention to their flexural strength(FS). **Methods:** 10 exacted teeth were placed in unset acrylic resin filled tubes and held in position until setting occurred. The mounted teeth were placed in a lathe and the crowns were reduced to a standardized full veneer crown preparation. Rexcillium 3 casting were made on each of the preparations. The castings were fitted and cemented with a provisional cement. The specimens were placed into a special fixture in the Instron and a tensile load applied until failure at a 1mm/min crosshead speed. The preparations and castings were cleaned and the next cement used. This process was repeated until all the cements had been tested. FS specimens (2.5x2.5x22) were made of each cement in brass molds. The specimens were separated and trimmed, they were placed into an Instron in a three point bending testing mode and loaded at a crosshead speed of 1mm/min until failure. The FS for each cement was calculated and correlated to the tensile failure load. ANOVA's and Tukey HSD post-hoc analysis were used to determine significant inter group differences (p=.05). **Results:** Significant differences in retention were provided by the various cements.

Cement Retention Strength

Material	Mean ± SD N	Material	Mean ± SD N
Temrex	125±61	Zone	71±19
Sensitemp	119±30	TempoCem	51±20
Premier	104±48	Exp. material	47±19
TempBond	87±19	Provilink	45±8
GC	71±36	TempoSil	37±24

FS was correlated with cement retention with cements providing higher retention values having greater FS $r=0.6845$. **Conclusions:** Cement selection should vary depending upon the preparation design and the length of time that the restoration is worn.

[Seq #58 - Adhesives, Bonding, Surface Treatments, Physical Properties](#)

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[Back to the Dental Materials: III - Ceramics and Cements Program](#)

[Back to the ADEA/AADR/CADR Meeting & Exhibition \(March 8-11, 2006\)](#)

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