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### Shear Bond Strength of Composite-Resin to Porcelain: Effect of Thermocycling

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#### Abstract:

**Objective:** Different ceramic repair systems have been reported for fractured ceramics. However, limited information is available concerning the bond strength of these systems especially after thermocycling. The aim of this in-vitro study was to determine the effect of thermocycling on the shear bond strength of composite-resin to feldspathic porcelain with and without silane pretreatment.

**Materials and Methods:** In this experimental study, forty porcelain blocks were prepared and randomly divided into four groups (n=10). All porcelain surfaces were etched with 9.6% hydrofluoric acid, rinsed and air dried. In groups 1 and 3, silane pretreatment was applied using Adper Scotchbond Multipurpose Plus (ASMP). Small-particle composite-resin was subsequently added on the ceramic surfaces, and light-cured. Specimens of groups 3 and 4 then subjected to 1000 thermal cycles. Shear bond strength was determined on a universal testing machine at a crosshead speed of 1mm/min. Two-way ANOVA test ( $\alpha=0.05$ ) was used to analyze the bond strength.

**Results:** There were statistically significant differences between study groups ( $P<0.05$ ). Thermocycling caused a decrease in the shear bond strength for both silanized and non-silanized groups.

**Conclusion:** According to the results of this study, shear bond strength after thermocycling reduced considerably in ASMP system. In addition, silane treatment of porcelain was critical for achieving durable bond strength between composite-resin and porcelain.

#### Keywords:

[Composite-resin](#) , [Thermocycling](#) , [Porcelain repair systems](#)

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