

[Acta Biomater.](#) 2010 Nov;6(11):4389-95. Epub 2010 May 31.

In vitro performance of self-adhesive resin cements for post-and-core build-ups: influence of chewing simulation or 1-year storage in 0.5% chloramine solution.

[Naumann M](#), [Sterzenbach G](#), [Rosentritt M](#), [Beuer F](#), [Frankenberger R](#).

Source

Department of Prosthetic Dentistry, University of Ulm, Ulm, Germany.
micha.naumann@gmx.de

Abstract

The aim of this investigation was to test the in vitro performance of a self-adhesive resin composite core build-up in comparison with two typical conventional etch-and-rinse composite core build-up materials, before and after 1 year of storage in 0.5% chloramine solution (LTS). Sixty human maxillary central incisors were divided into three groups. Teeth were root filled and decoronated. Specimens were restored using glass fiber posts cemented with a self-adhesive resin cement. Core build-ups were made with a self-adhesive (U) and two core build-up materials (C and L) applied with their corresponding bonding systems. All specimens received adhesively luted lithium disilicate crowns. Ten specimens of each group were exposed to LTS and examined monthly for cracks or other alterations. All specimens were thermocycled, mechanically loaded (TCML) and finally loaded until failure occurred. There was no statistical significant difference in regard to the number of failures during TCML without and with LTS (log rank: $p = 0.225$ and 0.609 , respectively). The median fracture load values after static loading without LTS and with LTS did not differ significantly (Kruskal-Wallis test: $p = 0.057$ and 0.106 , respectively), though the fracture patterns between the groups without ($p = 0.024$) and with LTS ($p = 0.027$) did. Self-adhesive cements used for core build-up have no significantly higher risk of failure compared to conventional core build-up materials in both LTS and TCML test scenarios.