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[\[PDF \(357K\)\]](#) [\[References\]](#)**Effect of Various Surface Conditioning Methods on the Adhesion of Dual-cure Resin Cement with MDP Functional Monomer to Zirconia after Thermal Aging**[Mutlu ÖZCAN](#)¹⁾, [Henk NIJHUIS](#)¹⁾ and [Luiz Felipe VALANDRO](#)²⁾

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Abstract:

This study evaluated the effect of chairside and laboratory types of surface conditioning methods on the adhesion of dual-cure resin cement with MDP functional monomer to zirconia ceramic after thermocycling. Disk-shaped (diameter: 10 mm, thickness: 2 mm) Y-TZP ceramics (Lava™, 3M ESPE) were used (N=40) and finished with wet 1200-grit silicon carbide abrasive paper. Specimens were randomly divided into four experimental groups according to the following surface conditioning methods (n=10 per group): Group 1—Chairside airborne particle abrasion with 50- μm Al_2O_3 + Alloy Primer (Kuraray); Group 2—Airborne particle abrasion with 50- μm Al_2O_3 + Cesead II Opaque Primer (Kuraray); Group 3—Airborne particle abrasion with 50- μm Al_2O_3 + Silano-Pen + silane coupling agent (Bredent); Group 4—Laboratory tribochemical silica coating (110- μm Al_2O_3 + 110- μm SiOx) (Rocatec) + silane coupling agent (ESPE-Sil). Adhesive cement, Panavia F 2.0 (Kuraray), was bonded incrementally to the ceramic surfaces using polyethylene molds (diameter: 3.6 mm, height: 5 mm). All specimens were thermocycled (5 and 55°C, 6,000 cycles) and subjected to shear bond strength test (1 mm/min). Data were

statistically analyzed (one-way ANOVA, $\alpha=0.05$), whereby no significant differences were found among the four groups (8.43 ± 1.3 , 8.98 ± 3.6 , 12.02 ± 6.7 , and 8.23 ± 3.8 MPa) ($p=0.1357$). Therefore, the performance of chairside conditioning methods used for zirconia was on par with the laboratory alternative tested.

Key words:

[Surface conditioning](#), [Panavia F 2.0](#), [Zirconia](#)



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