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The Effects of Water on Degradation of the Zirconia-Resin Bond

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Abstract

Objectives: 10-methacryloyloxydecyl dihydrogenphosphate (MDP) containing primers improve bonding of yttria-stabilised tetragonal zirconia (Y-TZP) to methacrylate resins. The present study investigated the role played by water in the deterioration of MDP-mediated zirconia-resin bonds.

Methods: Grit-blasted Y-TZP plates were conditioned with two MDP primers and bonded with resin for shear bond strength (SBS) testing. Additional bonded plates were aged hydrothermally and compared with unaged Y-TZP after 24 hours of water-storage or 6 months of water/acid/alkali-storage. The monoclinic phase ($m\text{-ZrO}_2$) in different groups was determined

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