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[\[PDF \(176K\)\]](#) [\[References\]](#)**Tensile Bond Strength between Custom Tray and Elastomeric Impression Material**[Yukinori MARUO](#)¹⁾, [Goro NISHIGAWA](#)¹⁾, [Morihiko OKA](#)²⁾, [Shogo MINAGI](#)²⁾, [Masao IRIE](#)³⁾ and [Kazuomi SUZUKI](#)³⁾

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Abstract:

The aim of this study was to investigate how to achieve sufficient and stable adhesive strength between impression material and tray. Impression materials were molded between autopolymerizing resin columns, and tensile strength was measured as a function of these factors: tray storage time (1, 2, 4, 7, and 10 days), adhesive drying time (0, 1, 5, 10, and 15 minutes), and tray surface roughness (air abrasion, bur-produced roughness, and no treatment). Tensile bond strength was not affected by tray storage time throughout the entire evaluation period of 10 days. As for tray adhesive drying time, Reprosil and Exaimplant yielded extremely low values for drying times of 10 minutes or less ($P < 0.05$), while Imprint II and Impregum were not influenced by drying time. Vinyl polysiloxane achieved the highest adhesive strength with bur-produced roughness, which was significantly higher than with air abrasion or no treatment ($P < 0.05$), whereas polyether achieved the lowest value with bur-produced roughness ($P < 0.05$). It was concluded that surface treatment of custom tray should be adapted to the type of impression material used to achieve optimum bond strength.

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