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[\[PDF \(657K\)\]](#) [\[References\]](#)**Effect of Surface Characteristics on Adherence of *S. mutans* Biofilms to Indirect Resin Composites**[Masaomi IKEDA](#)<sup>1)</sup>, [Khairul MATIN](#)<sup>1)2)</sup>, [Toru NIKAIDO](#)<sup>1)</sup>, [Richard M. FOXTON](#)<sup>3)</sup> and [Junji TAGAMI](#)<sup>1)2)</sup>

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**Abstract:**

The purpose of this study was to evaluate the adherence of biofilms to the surfaces of two indirect resin composites, Estenia C&B and Gradia. Slabs were prepared from the materials, and then either ground with 800-grit silicon carbide paper or polished with diamond pastes up to 1  $\mu\text{m}$ . Artificial biofilms of *Streptococcus mutans* were grown on the composite slabs in an artificial mouth system for 20 hours. Thereafter, the amounts of retained biofilm on the surfaces were measured after sonication. Surface characteristics of the resins—such as surface roughness, amount of residual monomers, and distribution of filler particles—were examined. Two-way ANOVA revealed that the amount of retained biofilm varied ( $p < 0.05$ ) according to the composition and surface roughness of the material. In particular, biofilm adherence was lowest on Estenia C&B slabs when polished with diamond pastes up to 1  $\mu\text{m}$ . It was thus concluded that the surface roughness and composition of a resin composite influenced biofilm adherence.

**Key words:**

[Indirect resin composite](#), [S. mutans](#), [Hybrid composite](#)



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