

LAMINATE POLYMER COMPOSITE: A COMPARATIVE LABORATORY STUDY

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ABSTRACT

The objective of this research work was to study the effect of reinforcing experimental, heat-cured acrylic denture bases with three different metallic and non-metallic meshes (stainless steel, fiber-glass and polyethylene) in the form of laminates as a trial to form a strong polymer composite. Impact energy and flexure strength were studied in laminates, free one layered and double layered experimental bases using the three selected materials. Macroscopic (visual) examination revealed different rupture patterns among the three laminate materials, however, the same fracture pattern (brittle fracture) was found in the base material. It can be concluded that laminate polymer composites have improved significantly in impact fracture for both single and double layered fillers especially for fiber-glass material. On the other hand, flexure strength showed no obvious improvement; on the contrary, deterioration in strength was developed in some cases.

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