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Hen Eggshell Based Composite as Prospective Dental Material

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Abstract. Deformation behavior under uniaxial compression and diametral compression of samples compacted from hen eggshell powder with different binders was examined. Depending on concentration and mechanical properties of a binder, deformation behavior of compacted powder can be changed from that inherent to biominerals, for example, tooth enamel and some magmatic rocks, to behavior that close to the viscous behavior of human dentin and some filled polymers or rubber. Hence, mechanical properties of this composite are qualitatively closed to the hard tissues of human tooth. Analysis of dangerous cracks morphology in composites from hen eggshell has confirmed that some features of the viscous deformation behavior are really take place in these materials under compression and tension. This allows considering hen eggshell based composites as prospective materials intended for tooth implants.

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