

عنوان مقاله:

The influence of cellulose pulp and cellulose microfibers on the flexural performance of green-engineered cementitious composites

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خلاصه مقاله:

The aim of this study was to investigate the flexural behavior of engineered cementitious composites (ECCs) reinforced by cellulose pulp (CP) and cellulose microfibers (CMF). The reinforcements were obtained from chemical-mechanical treatments of Kraft paper and used in ECC mix design. Results showed that cement reinforced by CP exhibited a strain-hardening behavior in the three-point bending test, while CMF led to a brittle behavior in cement composites. Moreover, different hybrid combinations of polyvinyl alcohol (PVA) and CMF achieved quite a high strength while maintaining a high level of flexural toughness. A combination of 0.5 vol% CMF and 1.5 vol% PVA resulted in a significant increase in flexural toughness and a slight improvement in flexural strength. The properties of this hybrid composite were comparable with one containing 2 vol% of PVA fiber

کلمات کلیدی:

,Cement, Engineered cementitious composite, Cellulose, Green composite, Flexural behavior, Microstructure

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