

The Mechanical Behavior of a Cement-Fiber Composite Material

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Abstract : The aim of the present research work is to characterize a cement palm date fiber composite in order to be used in isolation and in the manufacture of new structural materials. This technique may possibly participate seriously in the preservation of the environment and develop a growing need for plant products. On one hand, It has been shown that the presence of natural fiber in the composite materials manufacture, based on hydraulic binder, has improved the mechanical behaviour of the material. On the Other hand, It has been proven that the durability of composite materials reinforced with untreated fibers was largely affected by the presence of organic matter. In order to extract the organic material, the fibers were treated with boiling water and then coated with different types of products. A considerable improvement in the sensitivity to water of the fibers, as well as in the mechanical strength and in the ductility of the composite material was observed. The fiber being sensitive to water, the study put the emphasis on its dimensional stability.

Keywords : cement composite, durability, heat treatment, mechanical behaviour, vegetal fiber

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