

A Review on Cementitious Building Materials Reinforced With Date Palm Fibres

Wafa Labib

Assistant Professor
Architecture Department
College of Engineering
Prince Sultan University
Riyadh, Saudi Arabia

Abstract

The increase in the world population and their needs have led to a dramatic increase in the use of non-renewable resources. To find renewable solutions, the use of plant-based natural fibres in construction materials is substantially increased. Despite the low-cost of plant-based natural fibres, it has the ability to enhance the mechanical properties of building components. In addition, plant-based natural fibres are abundant in many countries. In KSA, more than 200,000 tons of date-palm waste are generated each year. Such waste has a vast potential to be used as fibre reinforcement in cement paste composites. This paper presents an extensive discussion on the feasibility of using date-palm as reinforcement for cement-based composites, with a particular emphasis upon fibre production in KSA; fibre characteristics and fibre cement composites performance. Finally, a recommendation for possible future work in this area is presented.

Keywords

Plant-based fibres, Date-palm fibres, renewable materials, and cement-based composites.