EXPERIMENTAL STUDY OF THE STRESS-STRAIN RELATIONSHIP OF PLAIN AND FIBER-REINFORCED CONCRETE UNDER MONOTONIC LOADING

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ABSTRACT

Concrete is one of the main building materials in Peru and worldwide, the study of its mechanical properties and concrete mix elaboration have been extensively developed over time. In the last years, new ways of elaboration with different materials have been searched, in order to improve its mechanical properties, including the fiber reinforced concrete. The study of its strain-stress mechanical properties of fiber reinforced concrete under monotonic load is the objective of this investigation, based on experimental tests performed in 90 samples, taking into account the influence of many factors, such as: Compression strength design, sample section geometry (square or circular section), slenderness (height/depth ratio), and the comparison of the reinforced concrete with its equivalent plain concrete – in terms of mix design.

Keywords: Fiber reinforced concrete, mechanical properties, monotonic load

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