Strength and energy absorption of high-strength steel fiber-concrete confined by circular hoops

Antonius, author

Abstrak

This paper presents the results of an experimental study of the behavior of steel fiber high strength concrete confined by hoops round cross-section. Behavior strength and energy absorption capability of confined fibrous concrete is the main focus in this study. Fibrous concrete test specimens are made by varying the concrete compressive strength, characteristics of confining reinforcement that is volumetric ratio and spacing. All these specimens use longitudinal reinforcement with the same ratio. Experimental results shows that the strength enhancement of confined steel fiber concrete is strongly influenced by the characteristics of the installed confining reinforcement. Stress-strain behavior of confined steel fiber high strength concrete between predictions based on existing confinement models with experimental results differ significantly, especially in the post-peak behavior. Therefore, prior modifications or developed the confinement model in order to obtain predictions of the behavior of confined steel fiber high strength concrete accurately.