

Experimental studies of fiber concrete creep

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Abstract. The results of two-stage experimental studies of the strength and deformation characteristics of fibrous concrete reinforced with steel fiber. In the experiments we used steel fiber with bent ends, which practically does not form "hedgehogs", which allows to achieve an even distribution of the fiber by volume. At the first stage, the cube and prismatic strength, deformability at central compression, a number of special characteristics are determined: water absorption, frost resistance, abrasion; the optimal percentage of fiber reinforcement and the maximum size of the coarse aggregate fraction were selected. Fiber reinforcement led to an increase in the strength of concrete at compression by 1.35 times and an increase in the tensile strength at bending by 3.4 times. At the second stage, the creep of fibrous concrete and plain concrete of similar composition at different stress levels was researched. Creep curves are plotted. It is shown that the use of fiber reinforcement leads to a decrease in creep strain by 21 to 30 percent, depending on the stress level.

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