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Non-Homogeneous Layered Fiber Reinforced Concrete

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Abstract : Fiber reinforced concrete is important material for load bearing structural elements. Usually fibers are homogeneously distributed in a concrete body having arbitrary spatial orientations. At the same time, in many situations, fiber concrete with oriented fibers is more optimal. Is obvious, that is possible to create constructions with oriented short fibers in them, in different ways. Present research is devoted to one of such approaches- fiber reinforced concrete prisms having dimensions 100 mm×100 mm×400 mm with layers of non-homogeneously distributed fibers inside them were fabricated. Simultaneously prisms with homogeneously dispersed fibers were produced for reference as well. Prisms were tested under four point bending conditions. During the tests vertical deflection at the center of every prism and crack opening were measured (using linear displacements transducers in real timescale). Prediction results were discussed.

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