

Analytical Investigation of Ductility of Reinforced Concrete Beams Strengthening with Polypropylene Fibers

Authors : Rifat Sezer, Abdulhamid Aryan

Abstract : The purpose of this study is to research both the ductility of the reinforced concrete beams without fiber and the ductility of the reinforced concrete beams with fiber. For this purpose, the analytical load - displacement curves of the beams were formed and the areas under these curves were compared. According to the results of this comparison, it is concluded that the reinforced concrete beams with polypropylene fiber are more ductile. The dimension of the used beam-samples for analytical model in this study is 20x30 cm, their length is 200 cm and their scale is $\frac{1}{2}$. The reinforced concrete reference-beams are produced as one item and the reinforced concrete beams with P-0.60 kg/m³ polypropylene fiber are produced as one item. The modeling of reinforced concrete beams was utilized with Abaqus software.

Keywords : polypropylene, fiber-reinforced beams, strengthening of the beams, abaqus program

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