

Optimum Content of Waste Fine Plastic Aggregate Using Mini181 Software for Best Performance of Reinforced Concrete

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Abstract

This research tries to find out the best content of waste plastic from waste compacted disk to be used in reinforced concrete through optimization process using Minitab software. Waste plastic has been used as partial replacement of volume of natural with these levels; 0, 2.5, 5, 7.5, 10, 12.5, and 15%. It was found compressive strength, modulus of elasticity, and bond strength between steel bar and concrete decreased with increasing plastic content. While compact resistance of reinforced two-slabs increased with increased plastic content. Besides from stress-strain relation, it can see the ductility of specimens increased with increasing plastic content. Optimization using Mini 181 software was made and it was found that the optimum content of eggshell is 5.91%.