

The Effects of Adding Waste Plastic Fibers on Some Engineering Properties of Roller Compacting Concrete.

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This research includes producing compacted concrete by rolling method and the possibility for using in highway construction field with studying the influence of adding waste plastic fiber resulting from manual cutting for bottles used in the conservation gassy beverage on different characteristics of this type of concrete. For the purpose of selecting mix proportions appropriate for rolling compacted concrete (RCC). Approved design method for ACI-committee (5R-207 .1980) was selected for this research.

Destroying plastic waste by volumetric rates ranging between (0.5%) to (2%) was approved. Reference mix was produced for comparison. Tests were conducted on the models produced from rolling compacted concrete like compressive strength, flexural strength and split tensile strength. The analysis of the results showed that the use of plastic waste fibers (1%) has led to improve the properties of each of the compressive strength and flexural strength and split tensile strength compared with reference concrete. Compressive strength in 28 days with fiber ratio (1%) is higher than (52.15%) from compressive strength in 28 days of reference concrete. It can be also observed that each of the flexural strength and split tensile strength increases by (17.86, 25.61)%, respectively, from flexural strength and split tensile strength for the reference mix .