

Compressive Strength and Modulus of Elasticity of Concrete with Cubed Waste Tire Rubbers as Coarse Aggregates

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Abstract	<p>One feasible solution to overcome the issue of tire disposal waste is the use of waste tire rubber to replace aggregate in concrete. We have conducted an experimental investigation on the effect of rubber tire waste aggregate in cuboid form on the compressive strength and modulus of elasticity of concrete. The test was performed on 72 cylindrical specimens with the height of 300 mm and diameter of 150 mm. We found that the workability of concrete with waste tire rubber aggregate has increased. The concrete density with waste tire rubber aggregate was decreased, and so was the compressive strength. The decrease of compressive strength is up to 64.34%. If the content of waste tire rubber aggregate is more than 40%, then the resulting concrete cannot be categorized as structural concrete. The modulus of elasticity decreased to 59.77%. The theoretical equation developed to determine the modulus of elasticity of concrete with rubber tire waste aggregate has an accuracy of 84.27%.</p>
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