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Experimental Investigation on Behaviour of Concrete using Concrete Debris

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Abstract: Concrete is one of the most widely used construction materials in the world. Cement and aggregate, which are the most important constituents used in the concrete production, are the vital materials needed for the construction industry. This inevitably led to a continuous and increasing demand of natural materials used for their production. Parallel to the need for the utilization of the natural resources emerges a growing concern for protecting the environment and a needed to preserve natural resources (such as aggregates) by using alternative materials which are recycled or waste materials. Recycling of concrete debris can make a contribution to reduce the total environmental impact of the building sector. To increase the scope for recycling in the future, aspects of recycling have to be included in the design phase. This experimental study aimed to use concrete debris as a partial replacement for coarse aggregate and fine aggregate. The specimens were produced with constant replacement of coarse debris as 50% and fine debris as 25%, 50%, 75%, 100%. Master Rheobuild 922CC admixture is used. The compressive strength was tested at various ages of 7, 14 & 28 days. Flexural strength and Split tensile was tested at 28days. It was found that (i) Concrete debriscomparably better strength than conventional concrete.
Keywords: Concrete debris, Aggregates, Strength tests.

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