

Comparison of properties of steel slag and crushed limestone aggregate concretes

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Abstract: Steel slag is produced as a by-product during the oxidation of steel pellets in an electric arc furnace. This by-product that mainly consists of calcium carbonate is broken down to smaller sizes to be used as aggregates in asphalt and concrete. They are particularly useful in areas where good-quality aggregate is scarce. This research study was conducted to evaluate the mechanical properties and durability characteristics of steel slag aggregate concrete in comparison with the crushed limestone stone aggregate concrete. The durability performance of both steel slag and crushed limestone aggregate concretes was evaluated by assessing water permeability, pulse velocity, dimensional stability and reinforcement corrosion. The results indicated that the durability characteristics of steel slag cement concretes were better than those of crushed limestone aggregate concrete. Similarly, some of the physical properties of steel slag aggregate concrete were better than those of crushed limestone aggregate concrete, though the unit weight of the former was more than that of the latter. 2002 © Elsevier Science Ltd. All rights reserved.