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The Effect of Coarse Aggregates Types on Properties of Self Compacting Concrete

The main purpose of this study is to investigate the effect of using three types of coarse aggregates (gravel, basalt and dolomite) and three different percentages of water and cement on the properties of self-compacting concrete. To this end, nine mixes containing different percentages of water and cement were designed. Three types of aggregates were used namely; gravel, basalt, and dolomite. The all fresh concrete mixes were prepared to achieve standard workability (slump flow). The compression, splitting tensile, and flexural strength tests were carried out on hardened self-compacting concretes after 28 days. In the nine mixes, three types of aggregates (gravel, basalt and dolomite), three cement content (350, 400, and 450 kg/m^3), and three water cement ratio (0.46, 0.42, and 0.38) were used. Results showed that. Slump flow of dolomite self-compacting concrete is greater than all concrete mixes with gravel and basalt. The density of self-compacting concrete basalt mix is greater than other concrete mixes with gravel and dolomite. The compressive, split tensile, and flexural strengths of self-compacting concrete dolomite mix is higher than all concrete mixes with gravel and basalt.