Engineering properties of normal concrete grade 40 containing rice husk ash at different grinding times

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Abstrak

The effect of rice husk ash produced at different grinding times on the engineering properties of concrete was studied. Eight rice husk ashes representing different grinding times were used in this investigation. Rice husk ash (RHA) was used to partially replace Port land cement Type I at 15% by weight of cementitious material. The compressive strength of concrete was designed to achieve grade 40 N/mm2 at 28 days. A superplasticizer was added to all mixes to provide
workability in the range of 110-120 mm. However, the water to cement ratio (w/c) of the concrete was maintained at 0.49. Based on the results, the morphology of the rice husk ashes was changed by grinding. Optimum grinding time appeared to be approximately 90 minutes, during which time the compressive strength increased significantly. Generally, incorporation of RHA at various grinding times can dramatically decrease or increase the engineering properties of concrete.