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## A Study on use of Rice Husk Ash in Concrete

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**Abstract:** The rice husk is an agricultural waste which is obtained from milling process of paddy and approximately 22% of the weight of paddy is rice husk. The waste is used as fuel in producing stream in parboiling process. The 25 % the weight of husk is converted into ash which is known as rice husk ash (RHA) and is again a waste which is disposed. This ash consists of amorphous silica which can be used as pozzolana in making concrete and cement instead of disposing it without compromising on the properties of cement or concrete if replaced in specific proportion with other constituents of cement or concrete. In this study the ordinary Portland cement is replaced in different proportion with RHA to obtain concrete with comparable and satisfactory strength and properties to that of normal concrete. The proportions of replacement chosen are at 2.5% interval starting from 5 % to 15 % and the casted concrete were tested under compression at different ages and results obtained are compared with normal concrete of same grade and it is concluded that the results are comparable.

Keywords: Rice Husk Ash, Cement, Concrete, Compressive strength, Split tensile strength, RHA

## REFERENCES

- [1]. Jaturapitakkul, C., Roongreung, B. 2003. Cementing Material from Calcium Carbide Residue-Rice Husk Ash, Journal of Materials in Civil Engineering, 15(5).
- [2]. de Sensale, G.R. 2005. Strength development of concrete with rice- husk ash, Cement and Concrete Composites, 28(2),158-160.
- [3]. Nair, D.G., Jagadish, K.S., Fraaij, A. 2006. Reactive pozzolanas from rice husk ash: An alternative to cement for rural housing, Cement and Concrete Research, 36,1062-1071.
- [4]. de Sensale, G.R. 2010. Effect of rice-husk ash on durability of cementitious materials, Cement and Concrete Composites, 32(9),718-725.
- [5]. Ramasamy, V. 2012. Compressive Strength and Durability Properties of Rice Husk Ash Concrete, KSCE Journal of Civil Engineering, 16(1),93-102.
- [6]. Mousavi, S.Y. 2011. Mechanical properties and durability assessment of rice husk ash concrete, Biosystems Engineering, 110(2), 144-152.
- [7]. Zain, M.F.M., Islam, M.N., Mahmud, F., Jamil, M. 2011. Production of rice husk ash for use in concrete as a supplementary cementitious material, Construction and Building Materials, 25(2),98-805.
- [8]. Krishna, R.N. 2012. Rice husk ash an ideal admixture for concrete in aggressive environments, 37thConference on Our World in Concrete & Structures: 29 31 August 2012, Singapore Article Online Id: 100037026.
- [9]. Bahri, S., Mahmud, H.B. Rice Husk Ash An Alternative Material to Silica Fume for Production of 100 MPa Mortar, Electronic Journal of Structural Engineering, 13(1),31-35

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