
Conference Abstract**Rice husk ash as partial substitute for sand in cement bricks**G. G. Anupama*, K. P. S. D Nandasiri[#], M. Thanihaichelvan

Department of Physics, Faculty of Science, University of Jaffna, Jaffna 40000, Sri Lanka

*gaganianupama1123@gmail.com, [#]srilaldharmapriya@gmail.com**Abstract**

Cost of the construction materials are increasing due to rapid growth of industry and demand. As a result, waste utilization has been one of the most vital aspects in the construction industry towards sustainability [1,2]. This study focuses on identifying the possibility of adding rice husk ash (RHA) instead of sand when making the cement blocks. The cement blocks with the dimension of 215mm× 105mm× 65m were made with various amount of RHA in the mixture. For comparison, the standard cement blocks were made with cement: sand ratio of 1:6 and the other six test cements blocks were made with different cement, RHA and sand ratio and decreasing the sand ratio as 1:5:1, 1:4:2 and 1:3:3 ratios of cement: sand: RHA, respectively. The bricks made were aged for 28 days. The dry and wet density, and the compressive strength were measured. Based on dry density measurements, the standard cement blocks fall under the normal weigh region while the RHA substituted bricks falls under the middle weight region. The compressive strength of the control and 1:5:1 bricks were found to be 3.35 (± 0.13) MPa and 3.13 (± 0.15) MPa. However, the compressive strength was found to be reduced to 2.86 (± 0.15) MPa and 2.5 (± 0.17) MPa for 1:4:2 and 1:3:3 bricks. The cement block with 1:5:1 mix proportion was found to be the best one for construction purpose, where middle weight and medium strength cement blocks required.

Keywords: Rice husk ash, Cement brick, Dry density, Strength**References**

- [1] N. Sathiparan, H.T.S.M. De Zoysa, J. Build. Eng., (2018), **19**, 216-227
- [2] K Thanushan, et al., J. Nat. Fibers., (2019), DOI:10.1080/15440478.2019.1652220