Development of Cement, Sand and Sawdust Based Composite Material to Use as Plaster for Walls

E.M.C.H.B. Ekanayaka*, K.K.A. Fernando and S.V. Udayakumara

Department of Materials Science and Engineering, University of Moratuwa, Katubedda, Moratuwa, Sri Lanka.

**e-mail: chanaka.harindra@gmail.com*

With the arisen development around the world, the demand for natural construction materials has been increased. Increasing consumption levels decrease the amount of available natural resources. The importance of material efficiency and the need to improve it can be studied from several perspectives. Limited availability or scarcity of materials may lead to threats to the economy, and the production processes of materials can have significant environmental impacts.

This study was concentrated on the use of sawdust as a partial replacement for fine aggregates in cement-based wall plaster material. Mahogany sawdust produced in local timber mills was selected for the study. Sawdust was incorporated into the plaster mixture in the raw form as well as in burnt form (saw dust ash). Composites were prepared by incorporating 5% and 10% saw dust by weight and sawdust ash by weight. Prepared composites were tested for flexural strength and tensile strength according to BS EN 1015 standard. Lee's disc method was used to compare the thermal properties of the composites.

Composite with 5% saw dust ash showed better properties compared to the composites with other sawdust combinations.

Keywords: *Wall plaster, Mahogany Sawdust, Composites*