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Use of saw dust as partial replacement for sand in the production of sandcrete blocks for construction

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Shelter is one of the most important needs of a man after food and water. One of the major components of any kind of shelter is its walling material. Today there are many development construction projects in Sri Lanka such as housing projects in the building engineering industry. It has become vital to reduce the cost of construction materials while reducing the use of fast depleting natural resources. Making the construction environment friendly through re-cycling of waste materials is also important. Using cement solid blocks for wall construction is a common and low cost method. Sandcrete solid blocks are made by using cement, sand and water.

This study was carried out to investigate the suitability of rubber wood saw dust as partial replacement for fine aggregate; sand in the production of sandcrete solid blocks for partitions and other non-load bearing uses in buildings where dead load weight can be reduced by light -weight materials. Saw dust is an industrial waste and sand is a fast depleting resource. Disposal of saw dust is a major problem in Sri Lanka. Production of sandcrete blocks of mix proportion 1:10 were made by partial replacement of sand with varying proportions (0% control sample, 5%, 10%) of sawdust as partial replacement for sand, to obtain the optimum amount of saw dust which can replace sand while conforming to Sri Lanka Standards (SLS). The chemical composition and fineness was investigated and the weight and strength of each block was determined to ascertain conformity with the minimum acceptable SL standards. The tests were carried out on the samples 7, 14 and 28 days after production. Comparing the compressive strength values, it is concluded that replacing sand with rubber wood saw dust at the 0%-5% proportion can be recommended at present and there is need for further studies.

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