

Abstract

The performance of Masonry blocks with partial replacement of sand by sawdust blended with crushed and grounded fish scales is evaluated. The parameters used in this study comprised of analyzing the physical properties and compressive strength of the specimens. Both sawdust and fish scales are by-products of industrial processes and are considered to be waste organic materials. The blocks are manufactured by replacing sand by sawdust and crushed fish scales combined in specified ratios at 5%, 10%, 15% and 20% by weight. Both sawdust and crushed fish scales were subjected to a pre-treatment process that involved washing and sun drying them for 24hrs to remove all impurities and moisture content in them. In the case of fish scales grinding had to be done. Then they were mixed with lime to allow for compatibility with the cement matrix at 5% proportion. The analysis of the mixture was undertaken for a compressive strength for the masonry blocks on the 7th, 14th, 21st and 28th days. The compressive strength of the blended masonry blocks was found to be 5.7N/mm² which conforms to the acceptable standards of lightweight blocks. The production of masonry with a replacement of upto 5% fine aggregates for the sawdust blend is found to be viable. This research study aims to assist the construction industry to achieve low cost housing for low income earners.