ABSTRACT

Sustainability is a wide accepted concept in modern construction scenario. Even though the construction industry is revolutionizing in a significant manner in terms of both equipment and materials used, the cost of construction has skyrocketed along with the deteriorative impact on environment. This resulted in the adoption of a more balanced approach with the environment as its nerve centre to create a better world to live in. This has led to the adoption of a natural fibre like Coconut for the strength enhancement in concrete. Coconut fibre is available in abundance at the test site, which makes it quite viable as a reinforcement material in concrete. Further it acts as a new source of income for the coconut producer who gets the benefits of the new demand generated by the construction industry. In addition to this, it is an effective method for the disposal of coir mattress waste which will reduce the demand for additional waste disposal infrastructure and decrease the load on existing landfills and incinerators. The problem of high rate of water absorption of the fibre could be reduced by coating the fibres with oil. Moreover the fibres being natural in origin is ecologically sustainable and can bring down the global carbon footprint quite effectively.

This study aimed at analyzing the variation in strength of coconut fiber reinforced concrete at varying fibre contents and to compare it with that of conventional concrete. The various strength aspects analyzed are the flexural, compressive and tensile strength of the coconut fiber reinforced concrete at varying percentages of fibre.