ABSTRACT

This project explores the feasibility of using Used Foundry Sand (UFS) as a partial replacement for fine aggregates in Engineered Cementitious Composites (ECC). The primary objective is to evaluate the impact of UFS on the mechanical properties, durability, workability, and sustainability of ECC. The study aims to enhance ECC performance by optimizing the replacement percentage, while simultaneously promoting the use of industrial waste in construction to reduce environmental impact and support eco-friendly practices. The experimental investigation involves replacing conventional fine aggregates with varying percentages of UFS and evaluating the resulting ECC mix's performance. Furthermore, the study seeks to identify the optimal replacement level that maximizes ECC performance and contributes to sustainability in the construction industry. Utilizing UFS not only mitigates the environmental effects of industrial waste but also offers a sustainable alternative to the depleting natural fine aggregate resources. The findings of this study have the potential to influence the development of cost-effective and environmentally responsible construction materials. By integrating industrial waste, this research supports green construction practices that align with the set.