

# Experimental Investigation of Mortar by Partial Replacement of P-Sand with Red Soil

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**Abstract:** An experimental investigation is carried out to study the behaviour of cement mortar using red soil partially replaced with p-sand (plastering sand). In this study, cement mortar of mix proportion 1:4 using red soil is partially replaced with p-sand as 5%, 10%, 15%, 20%, 25%. Compressive strength test, water absorption test, sorptivity test and acid immersion test are conducted to determine the properties of the cement mortar. The results show that the partial replacement of red soil with p-sand improves the compressive strength and reduces water absorption and sorptivity. Additionally, the acid immersion test revealed that the cement mortar with partial replacement of red soil with p-sand is more resistant to acidic conditions. This study provides insights into the potential use of p-sand as a partial replacement of red soil in cement mortar production, particularly for plastering purposes.

**Keywords:** Red soil, p-sand, compression strength, water absorption, sorptivity, acid immersion

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