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Experimental Study on COPPER SLAG As A Fine Aggregate Replacement

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ABSTRACT:

This project reports on compressive strength of concrete an experimental program to investigate the effect copper slag and polypropylene fibre. Copper slag is used as material for replacement of fine aggregate in concrete and polypropylene used an additive in the concrete. In this work, concrete grade M30 was used and IS method was used for mix design. The properties of material for cement, fine aggregates, coarse aggregates and copper slag were obtained by material testing and mix design. The compressive strength was studied for various replacements of fine aggregate by copper slag in proportions of 0%, 10%, 20%, 30%, 40%, 50%, 60% and 100%. The polypropylene fiber was varied from 0.1%, 0.2%, 0.3%, and 0.4% by weight of concrete. The test was carried out to obtain a characteristic strength of 30N/mm². The compressive strength was obtained at 7 and 28 days. The maximum compressive strength of concrete was attained 40% replacement of fine aggregates at 7 and 28 days. When 0.2% of polypropylene was added maximum compressive strength was obtained.

Keywords: Copper Slag, Polypropylene Fibre, Compressive Strength

