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Experimental Studies on Corrosion and Durability Analysis in Building Materials

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Abstract : In modern days the stipulate for river sand is increasing due to its lesser accessibility. Hence the preparation of replacing river sand with M-Sand is tacking a tremendous growth. It is also inferred from the literature that replacement of normal sand with M-Sand produces no appreciable increase in compressive strength due to the variation in the pore size of concrete at micro level. This paper presents the optimization of fully replacement of manufactured sand by natural sand with waste recycling paper cupsash partial replacement by cement and additional polyvinyl alcohol used for good bonding & high performance concrete. Using M20 Grade ordinary Portland cement is moderately replaced with waste recycling paper cups ash by 5 %, 10% & adds 10 % of polyvinyl alcohol and natural sand is fully replaced with manufactured sand. The studies make known that the increase in percentage of partial substitute of waste recycling paper cups ash and polyvinyl alcohol increased the compressive, flexural, durability, low permeability, high corrosion resistance and low acid penetration of concrete.

Key words : compressive strength, durability, polyvinyl alcohol, paper cups ash, corrosion resistance M – sand.

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