

Energy saving & retarding land pollution by using waste Polymers in mortar

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Land pollution may in turn slowly destroy our natural environment which is already at risk. Waste generated from polymers is a major contributor to land pollution. Polymer waste is generally dumped in open spaces and become a breeding space for mosquitoes and flies. This results in unhealthy environment and epidemic diseases. It is therefore, necessary to manage or recycle these wastes. An efficient practice may be to incorporate polymer waste in mortar. This paper investigates the possibility of using different polymers in cement mortar to produce thermal resistant mortar. Polymers selected for study are scrap polyvinyl chloride pipes (PVC pipes) and raw material of polyethylene terephthalate bottles (PET bottles). Scrap rubber tire waste is also not recyclable or reusable and only 5% of tire waste is recycled rest is dumped into open grounds, which again is hazardous to environment. In this study performance of mortar incorporating 10%, 20% and 30% polymers as volume replacement of fine aggregate was investigated. Results showed that incorporating polymer waste in mortar increases thermal resistance of mortar, compressive strength on the other hand is deteriorated. Based upon findings of the experiments performed it can be concluded that polymers can be used in mortar to increase its thermal resistance and subsequently reducing environmental pollution.