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A study of effect of tempered glass fines in concrete at elevated temperature

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Waste management is a major issue worldwide. Glass is one of the solid wastes. Being non-biodegradable, it is inappropriate for landfill. One of the ways of disposing it off is its use in concrete for partial replacement of aggregates. In this study, tempered glass fines were used as partial replacement of aggregates in order to enhance the fire resistant properties of concrete. Concrete cubes with varying percentage and size of glass fines were tested for compressive strength at normal and elevated temperature (790 degree Celsius). Maximum increase in strength (119% at normal temperature and 50% at elevated temperature) was observed for the 5% replacement of sand with glass fines of size passing ASTM sieve # 4 and retained on sieve # 12

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