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AN EXPERIMENTAL STUDY ON MECHANICAL BEHAVIOUR AND CHARACTERISTICS OF POLYMER MODIFIED CONCRETE WITH PARTIAL REPLACEMENT OF GLASS POWDER AS FINE AGGREGATES

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ABSTRACT: This study represents the comparison of mechanical properties of the concrete modified with polymer and partial replacement of glass powder as fine aggregate with conventional concrete. Polymer concrete provides many advantages like high resistance to impact, freezing and thawing, chemical attacks and abrasion when compared to normal conventional concrete. Polymer concrete can be used mainly for floor surfaces subjected to high loads and wear, dam structures, bridge decks, high load bearing walls, etc. The trial mixes involves replacement of cement by 5%, 10%, 15% of acrylic polymer and fine aggregates are replaced by glass powder at 20%, 40%, 60%, 80% , higher optimum compressive strength was obtained when the cement is replaced by acrylic polymer at 5% and the fine aggregates were replaced by glass powder at 20% compared to other trial mixes. By using this optimum mix a structural column is to be casted and its buckling load will be determined.

Keywords: Acrylic Polymer, Glass Powder, Strength, Column, Buckling Load

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