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Exploring Novel Applications of Fly Ash Polymer Materials: Analytical Insights

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Abstract: *In order to demonstrate that fly ash-based geopolymers can be produced under specified conditions and with the necessary compressive strength for use in building, no additional sand, cement, or aggregates are needed. A series of experiments involving at least 73% fly ash shown that, with the right curing conditions, a compressive strength of up to 90 MPa could be achieved. Higher alkalinity produced stronger materials, but without the need of sand and cement, the results shown a 40% reduction in CO2 emissions. These materials are appropriate for construction uses that have little effect on the environment.*

Keywords: Fly Ash, Geopolymer, Compressive Strength, Carbon Dioxide, Construction, CO2 Emissions