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## A REVIEW ON REPAIRS AND REHABILITATION OF CONCRETE STRUCTURES BY USING ECO-EFFICIENT ALKALI ACTIVATED CONCRETE

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**ABSTRACT:** In recent year the rapid growth in research and development related to geopolymer has indicated the wide applications in field of concrete repairs and rehabilitation. This paper reviewed the current research on concrete repair materials, highlighting the properties of geopolymer material. Geopolymer are materials that have wide applications in concrete structure coating, rehabilitation and sensing due to their high chloride, sulphate, fire and freeze-thaw resistances. Coating technologies are an effective means of protecting concrete structures from chemical attack and rebar corrosion. Inorganic coatings in particular have been widely applied as anticorrosive and decorative materials for concrete and steel structures. These materials show a high long-term durability even under acid and alkali attack and at elevated temperatures. Geopolymer had good repair characteristics and shows the potential as an excellent repair material. The existing infrastructures were given a little attention to durability issues long years ago and this is one of the factors affecting the damaged concrete structures. However, the continuous development among researchers is a good opportunity to take in order to solve the current issue towards implementing sustainable and cost effective geopolymer repair material. Geopolymer also shows the ability and promoted excellent bond strength to the old concrete, environmental friendly and even cost effective.

**Keywords:** Geopolymer Materials, Concrete repair, Repairs and Rehabilitation

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