

Comprehensive Review Of Need For User Friendly Geopolymer Concrete

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friendly and less material and energy intensive manner.

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The quest for sustainable construction materials is always of great interest amongst the civil engineering professionals and the researchers. One of the major research outcomes in the field of sustainable construction materials is the development of geopolymer concrete. Initially, developed as a fire-resistant ceramic material, the now commonly known geopolymer concrete has found its way into construction industry as a potential substitute for the conventional Portland cement (OPC) concrete. Despite, high durability, high strength, and high resistance to chemical attacks the geopolymer concrete is not widely used majorly due to the high requirement of chemical activators and need of heat curing unlike the ordinary cement. This study conducts a comprehensive review of the research developments in production of a user-friendly and durable geopolymer concrete. The study reports the durability performance and effectiveness of geopolymer concrete made using single chemical activator under ambient curing conditions. The adoption of a production method like that of OPC is ought to bring more acceptance for the geopolymer concrete since it primarily makes use of sustainable and recycled waste products as material constituents. This study reports the durability properties of geopolymer concrete made using sustainable binder materials like industrial waste powders inclusive of fly ash, slag, rice husk ash and so on. This comprehensive review will contribute to compiling the various design mixes available for production of sustainable geopolymer concrete in a user-