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Patent Search

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Abstract:

SELF-CURING CONCRETE USING SODIUM POLYACRYLATE AND PARTIAL CEMENT REPLACEMENT WITH GROUND GRANULATED BLAST FURNACE SLAG (GGBS) The present invention provides a novel self-curing concrete composition and method that reduces the reliance on external curing techniques, uses sustainable materials like GGBS, and enhances the performance and durability of concrete. The combination of sodium polyacrylate and ground granulated blast furnace slag (GGBS) offers a cost-effective and environmentally friendly solution to the challenges posed by traditional concrete curing methods. The sodium polyacrylate is present in an amount of 0.2-1.0% by weight of the binder and the GGBS is present in an amount of 30-40% by weight of the binder.

Complete Specification

Description:4. DESCRIPTION

Technical Field of the invention

The present invention relates to self-curing concrete compositions and methods for preparing them. Specifically, the invention pertains to a self-curing concrete formulation that incorporates sodium polyacrylate and uses ground granulated blast furnace slag (GGBS) as a partial replacement for cement, improving both the process and the environmental sustainability of the concrete mix.

Background of the invention

Concrete is a commonly used construction material, and its properties, such as strength, durability, and workability, are significantly influenced by the curing process. Traditional curing methods require external water sources to ensure proper hydration of cement particles, which can be challenging in hot climates or large-scale projects due to water scarcity and the high cost of water usage.

Furthermore, the production of cement results in significant carbon emissions due to the calcination of limestone and the energy-intensive process. This has prompted

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