

ALKALI-ACTIVATED FLY ASH FOR USER-FRIENDLY CONSTRUCTION



BACKGROUND

Modern construction demands materials that offer robust performance and adaptability, especially in areas facing logistical challenges or extreme conditions. Traditional building methods often struggle with complex supply chains, specialized equipment requirements, and inconsistent quality in extreme field requirements. Furthermore, the global challenge of industrial waste accumulation necessitates innovative solutions that transform byproducts into valuable, reliable resources for infrastructure development.

DESCRIPTION

The inventor created a pre-formulated, ready-to-use dry mix for high performance geopolymer concrete, simplifying the entire construction process for end-users. The mix combines industrial byproducts with optimized activators and additives, ensuring consistent workability, rapid strength development, and long-term durability without complex site prep. The product eliminates the need for on-site blending or specialized equipment, making it accessible to a wide range of users from large contractors to individual builders. The material delivers reliable freeze-thaw resistance, chemical stability, and low shrinkage providing a resilient and adaptable building solution.

ADVANTAGES

- Versatile performance
- Waste utilization - Repurposing fly ash
- Easy on-site and DIY use
- Cold climate durable

APPLICATIONS

- Remote area construction - building in isolated locations
- Cold-climate construction - durability in harsh environments

INTELLECTUAL PROPERTY

- Patent Pending - Application #63/647296

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A concrete block made from fly ash.

INVENTORS

Nima Farzadnia

CONTACT

David Park
dspark@alaska.edu
907.474.2605

