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(57) Abstract :
ABSTRACT: Title: A Method for Enhancing Compressive Strength of Cement Concrete for High Temperature Applications using Colloidal Silica The present disclosure proposes a method of preparation of high-performance cement concrete with colloidal silica for high temperature applications for enhancing mechanical strength, thermal stability, and durability at elevated temperatures. The proposed cement concrete with colloidal silica for high temperature applications enhances mechanical strength, thermal stability, and durability at elevated temperatures. The compressive strength of the concrete specimens reaches a maximum value at an elevated temperature of 200°C for all concrete mixtures. The proposed cement concrete reduces weight and permeability of concrete. The proposed cement concrete improves fire resistance of concrete. The proposed cement concrete determines the optimal content of colloidal silica for use in concrete. The proposed method determines the effect of colloidal silica on the strength and durability of the concrete.

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