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Microstructure and Thermal Conductivity of Cement-Based Foam:A Review

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Abstract

This paper presents a review of existing studies on the microstructure and thermal conductivity of cement-based foam. Previous studies on constituent materials, measurement techniques for thermal properties, characterization of microstructure, the thermal conductivity of cement-based foam and conductivity models for the dry porous material are included in the discussion. Based on the review, the following research areas have been identified: (i) Influence of pozzolanic admixtures and different cast densities on the thermal conductivity of cement-based foam (ii) Effect of microstructure on the thermal conductivity (iii) Governing hydrated products and their impact on the conductivity (iv) The applicability of existing model for predicting the thermal conductivity of cement-based foam.

Keywords: cement-based foam; pozzolanic admixture; thermal conductivity; density, insulation

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