

Author's Accepted Manuscript

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

Farnaz Batool, Muhammad Masood Rafi, Vivek
Bindiganavile



PII: S2352-7102(17)30085-2
DOI: <https://doi.org/10.1016/j.jobe.2018.09.008>
Reference: JOBE580

To appear in: *Journal of Building Engineering*

Received date: 10 February 2017
Revised date: 10 September 2018
Accepted date: 10 September 2018

Cite this article as: Farnaz Batool, Muhammad Masood Rafi and Vivek Bindiganavile, Microstructure and Thermal Conductivity of Cement-Based Foam:A Review, *Journal of Building Engineering*, <https://doi.org/10.1016/j.jobe.2018.09.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

Farnaz Batool^{1*} Muhammad Masood Rafi² and Vivek Bindiganavile³

¹Assistant and Contact Author (E),Department of Civil Engineering, NED University, Pakistan.

²Professor, Department of Earthquake Engineering, NED University of Engineering and Technology, Pakistan.

³Associate Professor, Department of Civil and Environmental Engineering, University of Alberta, Canada.

batool1@ualberta.ca

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

* Formerly, Graduate Research Assistant at the University of Alberta.

Download English Version:

<https://daneshyari.com/en/article/11001111>

Download Persian Version:

<https://daneshyari.com/article/11001111>

[Daneshyari.com](https://daneshyari.com)