

Author's Accepted Manuscript

MICRO-STRUCTURAL BEHAVIOUR OF INTERFACIAL TRANSITION ZONE OF THE POROUS SINTERED FLY ASH AGGREGATE

Manu S. Nadesan, Pasla Dinakar



PII: S2352-7102(17)30371-6
DOI: <https://doi.org/10.1016/j.jobee.2017.12.007>
Reference: JOBE379

To appear in: *Journal of Building Engineering*

Received date: 7 July 2017
Revised date: 12 December 2017
Accepted date: 13 December 2017

Cite this article as: Manu S. Nadesan and Pasla Dinakar, MICRO-STRUCTURAL BEHAVIOUR OF INTERFACIAL TRANSITION ZONE OF THE POROUS SINTERED FLY ASH AGGREGATE, *Journal of Building Engineering*, <https://doi.org/10.1016/j.jobee.2017.12.007>

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.

MICRO-STRUCTURAL BEHAVIOUR OF INTERFACIAL TRANSITION ZONE
OF THE POROUS SINTERED FLY ASH AGGREGATE

Manu S Nadesan¹, Pasla Dinakar^{2*}

¹PhD Scholar

²Associate Professor, School of Infrastructure, Indian Institute of Technology
Bhubaneswar, India

Abstract

The interfacial transition zone (ITZ) has a significant influence on the hardened concrete behaviour. The behavior of ITZ is not well established in the case of sintered fly ash aggregate (SFA) concrete compared to normal aggregate concrete. The present study emphasizes to quantify the characteristics of ITZ of the SFA concrete. To understand the influence of water-cement ratio on the ITZ behavior, various water-cement ratios ranging from 0.25 to 0.75 were employed and the ITZ characteristics were assessed both at 28 and 90 days through various experimental methods such as microhardness test, SEM-EDX and impedance spectroscopy. Also, a comparison is made with the ITZ of the normal granite aggregate concrete. The results indicate that the ITZ formed in the SFA aggregate concrete is denser than the normal aggregate concrete.

Keywords: ITZ; SFA; SEM; microhardness; Impedance spectroscopy.

*Email: pdinakar@iitbbs.ac.in

Download English Version:

<https://daneshyari.com/en/article/6749949>

Download Persian Version:

<https://daneshyari.com/article/6749949>

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