

ABSTRACT OF A THESIS

HYDRATION KINETICS OF BLAST FURNACE SLAG IN PORTLAND CEMENT

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Master of Science in Chemical Engineering

The hydration kinetics of blended cement containing 30% ground granulated blast furnace slag and 70% Type I MO Portland cement was studied. The samples were hydrated up to two months at 30, 40, 50, and 60 °C. Thermogravimetric analysis (TGA) and X-ray Diffraction were used to determine the calcium hydroxide (CH) and nonevaporable water content of all samples. The subject slag was found to both accelerate cement hydration and consume CH. X-ray diffraction was used to confirm TGA results for select samples. The study demonstrated that measures of both clinker and slag hydration are required to define hydration kinetics in slag-blended cements.

HYDRATION KINETICS OF BLAST FURNACE SLAG IN PORTLAND CEMENT

A Thesis

Presented to

the Faculty of the Graduate School

Tennessee Technological University

by

Priyabrata Das

In Partial Fulfillment

Of the Requirements for the Degree

MASTER OF SCIENCE

Chemical Engineering

December 2002

CERTIFICATE OF APPROVAL OF THESIS

HYDRATION KINETICS OF BLAST FURNACE SLAG IN PORTLAND CEMENT

by

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