



RESEARCH PROJECT CAPSULE [13-2C]

September 2013

TECHNOLOGY TRANSFER PROGRAM

Laboratory Evaluation of 100% Fly Ash Cementitious Systems Containing Ekkomaxx

JUST THE FACTS:

Start Date:
June 25, 2013

Duration:
24 months

End Date:
June 24, 2015

Funding:
SPR: TT-Fed/TT-Reg

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Sponsored jointly by the Louisiana
Department of Transportation and
Development and Louisiana State
University

POINTS OF INTEREST:

*Problem Addressed / Objective of
Research / Methodology Used
Implementation Potential*

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PROBLEM

Long-lasting, durable concrete is a must have for DOT's in today's construction and economic climate. Many entities are turning to alternative concrete mixtures, such as ternary mixtures, lower w/cm ratios, lower cementitious materials contents, and alternative binders such as Ekkomaxx, to ensure long term durability. This project will evaluate concrete produced with 100% class C fly ash combined with an activator provided by Ceratech. The use of class C fly ash as a sole binder for production of portland cement concrete can be difficult and the aforementioned product allows the control of the set times to allow better usage of class C fly ash as the sole binder. This project will enable the the Louisiana Department of Transportation and Development (DOTD) to gain a more in-depth understanding of the interactions associated with the use of 100% class C fly ash systems produced with Ceratech's activator.

OBJECTIVES

The objectives of this research are to fully characterize the concrete containing Ekkomaxx for fresh and hardened properties; determine the first, second, and third level interactions; and determine all main effects. From the results, a specification may be developed for the use of Ekkomaxx products in DOTD projects.

METHODOLOGY

To complete the objectives of this study outlined above, comparative testing will be conducted on samples of varying ages, as noted in the testing plan.

IMPLEMENTATION POTENTIAL

It is foreseen that the results of this study will greatly assist DOTD in determining whether or not to allow the use of Ekkomaxx types of products. The results of this research are anticipated to be applied to all classes of concrete including pavement, structural, and concrete for other applications such as precast and drilled shafts. It is anticipated that the products would be implemented as an alternative to conventional portland cement concrete for all concrete applications.

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