شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

MONA MAGHRABY

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التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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MONA MAGHRABY

USE OF STEEL FIBERS TO ENHANCE MECHNICAL PROPERTIES OF CONCRETE SUBJECTED TO HIGH TEMPERATURES

By

HOSSAM ELDIN SALEH ABD ELHAMED SALEH

A Thesis Submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
In
STRUCTURAL ENGINEERING

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Prof. Dr. HANY AHMED ABDALLA

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Professor of Concrete Structures
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Approved by the
Examining Committee

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Title of Thesis:

"Use of steel fibers to enhance mechanical properties of concrete subjected to high temperature".

Key Words:

Steel fiber reinforced concrete; Flexure Ultimate Load; Splitting Ultimate Load; Compressive Ultimate load.

Summary:

This research presents an experimental study to investigate improving the mechanical properties of concrete subjected to high temperatures using steel fibers. The concrete samples include standard cubes, cylinders, and beams. The concrete mixtures contain different ratios of steel fibers (0.5%, 1.0% and 1.5%). Some samples were manufactured without fibers for comparison purposes. These samples were heated in the laboratory oven up to 700°C. Different tests were carried out on the heated and unheated samples. Such tests include compression, splitting, and flexural tests. The results show that steel fibers have a significant effect on the mechanical properties of concrete elements subjected to high temperatures. The results can help structural engineers in design and execute buildings with potential fire risks.

Disclaimer

This thesis is submitted to Cairo University for the Degree of Master of Science in Structural Engineering.
No part of this thesis has been previously submitted for obtaining a degree or a qualification.

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