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التوثيق الالكتروني والميكروفيلم

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قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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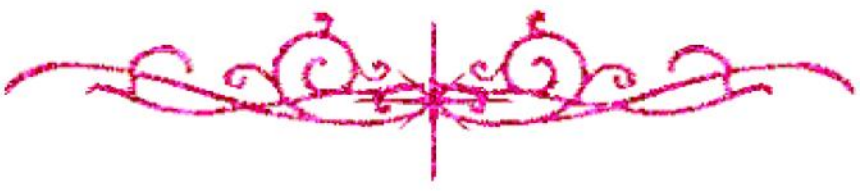

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MECHANICAL PROPERTIES OF LIGHT WEIGHT RC BEAMS CONTAINING FIBERS UNDER THE EFFECT OF ELEVATED TEMPERATURE

By

Mustafa El-Nos Abd Alazeem Ali

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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Title of Thesis:

Mechanical Properties Of Light Weight RC Beams Containing Fibers Under The Effect Of Elevated Temperature

Key Words:
Light weight concrete; Expanded polystyrene beads; Glass fiber; Temperature elevated; Flexural

Summary:

Investigate the effect of polystyrene beads content on compressive strength, tensile strength. Establishing the effect of glass fiber presence on mechanical behavior of LWRC. Determination of effect of duration and temperature during fire exposure on percentage of mass losses, failure load, steel and concrete temperature, crack pattern and deflection under flexure load. Finding the effect of heat treatment after fire exposure on percentage of mass losses, failure load, steel and concrete temperature, crack pattern and deflection under flexure load. The results revealed that; LWC containing 40% polystyrene replacement of coarse aggregate gives compressive strength 48% of normal weight concrete. Adding 0.5% glass fiber content to LWC increases compressive strength by 6%. Exposing FLWRC beams to 600Co for 2 hours caused reduction in flexural capacity of 31%. On the other hand, N.C beams exposed to same conditions suffer a flexural capacity reduction of 34%.

`

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Mustafa El-Nos Abd Alazeem Ali Date: .... /.... / 2020

Signature:

`

Dedication

This thesis is dedicated to my *parents*, my *brothers*, and my *sisters* who have supported me all the way since the beginning of my studies. It also dedicated to my *Advisor*, and *Dr. Rham Hassan*, who have been a great source of motivation and inspiration.

`

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`

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