شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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Cairo University

BEHAVIOR OF LOW STRENGTH RC BEAMS STRENGTHENED WITH FRP SHEETS

By

Wisam Elhammali Mansour

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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Under the Supervision of

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Approved by the
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Title of Thesis:

Behavior of low strength RC beams strengthened With FRP sheets

Key Words:

Shear behaviour; flexural behavior; low strength concrete; CFRP sheets; RC beams

Summary:

In this experimental study, ten RC beams with 2000 mm in length, 300 mm in height, and 150 mm in width were tested for shear under three-point loading test. Eight specimens had varied concrete strength were strengthened with CFRP strips, while the other two were kept unwrapped for comparison purposes. The parameters considered in this study included concrete strength, reinforcement ratio, and amount and configuration of FRP strips. The RC beams strengthened with inclined CFRP strips showed significant increase in failure load. As the amount of main reinforcements and concrete compression strength increased, the effect of using CFRP in strengthening of RC beams became more efficient. The experimental shear capacities of RC beams showed a good agreement with calculated values according to Egyptian code of practice, ECP 208-05.

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: Wisam Elhammali Mansour Date: / /2021

Signature:

ACKNOWLEDGMENTS

I would like to show my gratitude for my supervisor **(Prof. Dr.Hany Ahmed Abdalla** and **Dr. Ahmed Mohammed Youssef)** for their guidance, advices, support and valuable discussions review during my Master, and their great efforts to achieve my objectives.

I want also to thank my father, my mother, and all my friends who always help me for the success. I would not achieve this goal without their help and support**.**

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