بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

شبكة المعلومات الجامعية

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MONA MAGHRABY

COMPARISON BETWEEN FINITE ELEMENT AND DIFFERENT CODES FOR DETERMINING THE CAPACITY OF COMPOSITE BEAM COLUMN

By

Mohammed Ali Ibrahim Ali Mohammed

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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Title of Thesis:

Comparison Between Finite Element and Different Codes for Determining the Capacity of Composite Beam Column

Key Words:
Composite Column; Concrete Encased; Interaction Diagram; Steel-Core Area

Summary:

The thesis presents an analytical investigation of the flexural and compression load capacity of the composite columns from a steel section encased with reinforced concrete, by using the finite element theory that was applied to different models of the columns under study where several variables were studied such as the area of the longitudinal reinforcement bars and the area of the steel core section, and a comparison of different codes results using the reaction diagram.

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: Mohamed Ali Ibrahim Ali Mohamed Date: ----/----/-----

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Dedication

To my parents and my sisters with love

Acknowledgments

I am grateful to my parents who are always behind me for the success. I would not have achieved this work without their help.

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