شبكة المعلومات الجامعية

بسم اللّه الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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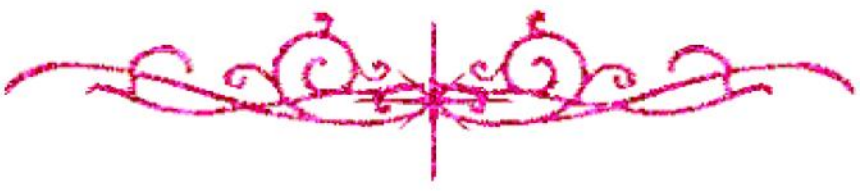
بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية

بالرسالة صفحات
لم ترد بالأصل

THE EFFECT OF NON-UNIFORMITY OF DIMENSIONS ON THE EVALUATION OF SEISMIC RESPONSE MODIFICATION FACTOR FOR REINFORCED CONCRETE FRAMES.

By

Manar Gamal Abd-El-Rahman Mahmoud

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

Prof. Dr. Walid A. Attia
……..

Professor of Structural Analysis and Mechanics
Structural Engineering Department
Faculty of Engineering, Cairo University

Prof. Dr. Manar Maher Hussein
…..……..

Associate Professor of Structural Analysis and Mechanics
Structural Engineering Department
Faculty of Engineering, Cairo Universit

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Approved by the
Examining Committee

_____

Prof. Dr. Walid A. Attia, Thesis Main Advisor
Professor of Structural Analysis and Mechanics, Structural Engineering Department, Faculty of Engineering, Cairo University

_____

Dr. Manar M. Hussein, Advisor
Professor of Reinforced concrete structures, Structural Engineering Department, Faculty of Engineering, Cairo University

_____

Prof .Dr. Ahmed Hassan Amer, Internal Examiner
Professor of Structural Analysis and Mechanics, Structural Engineering Department, Faculty of Engineering, Cairo University

_____

Prof .Dr. Hatem Hamdy Gheth, External Examiner
(Professor, Housing and building National Research Center)

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2020

Engineer's Name: Manar Gamal Abd elrahman Mahmoud
Date of Birth: 2./9/1990
Nationality: Egyptian
E-mail: engmanargamal5@gmail.com
Phone: 01158983186
Address:

Registration Date: 1/3/2014
Awarding Date: …./…./……..
Degree: (Master of Science)
Department: Structural Engineering

Supervisors:

Prof. Walid A.A
Dr. Manar M. Hussein

Examiners:

Prof.Walid A.A (Thesis main advisor)
Prof. Manar M.Hussein (advisor)
Prof. ……(Internal examiner)
Prof. ……(External examiner)

(Any External Prof Dr. must write his work place)

Title of Thesis:

The effect of non-uniformity of dimension on the evaluation of seismic response factor for reinforced concrete

Key Words:
Response modification factor; pushover; parametric study; ductility factor; non-uniformity in dimension.

Summary
Base shear is measured in existing seismic design codes using the elastic force requirement divided by strength reduction factor. This element is used to take account of structures' ability to dissipate energy by inelastic deformations. This can be divided into three principal components reflecting a structural system ductility, over strength, and redundancy. Such factors depend on both structural system characteristics and ground motion. Earthquake resistant design has recently gained more popularity in Egypt. Nevertheless, there are not enough studies that explain the behavior of various structural structures used in Egypt. In this research, this study focuses on the evaluation of the response modification factor which is considered the main component of the seismic analysis. The parametric study is conducted to understand the response modification factor values of RC moment resisting frames for different number of stories, non-uniform spans and floors height and compared them to uniform bay length and floor height values and compared them with the value of ECP. RC resisting frames are selected as they are commonly used for seismic design in Egypt.

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Name: Manar Gamal Abd Elrahman Date: 8/23/2020

Signature:Manar Gamal

Dedication

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving parents, my husband Eng. Mahmoud Adel, Amira and Doaa Naser whose words of encouragement and push for tenacity ring in my ears. My sisters Katie, Linda and Rhonda have never left my side and are very special. I also dedicate this dissertation to my many friends and church family who have supported me throughout the process. I will always appreciate all they have done, especially Dr Manar for helping me develop my technology skills, Eng. Gamal Zahran for the many hours of proofreading. I dedicate this work and give special thanks to my best friend Eng Ahmed Ismail. My wonderful daughter Lara for being there for me throughout the entire doctorate program. Both of you have been my best cheerleaders.

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I am extremely grateful to my parents for their love, prayers, caring and sacrifices for educating and preparing me for my future. I am very much thankful to my husband and my daughters for their love, understanding, prayers and continuing support to complete this research work. Also I express my thanks to my sisters, brother, sister in law and brother in laws for their support and valuable prayers.

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