بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله 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

MONA MAGHRABY

NUMERICAL STUDY OF PROTECTIVE CONCRETE WALL PANELS PERFORMANCE IN RESISTING BLAST LOADS

By

Ahmed Mokhtar Mahmoud Mohamed Abdel Fattah

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

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Approved by the
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FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

Numerical study of protective concrete wall panels performance in resisting blast loads.

Key Words:
Blast resistance; sacrificial layers; concrete reinforced panels; behavior under blast loading; analytical modeling of blast loading

Summary:

The research explains the blast phenomenon briefly, the explosives hazard and structures protection against explosives. It shows the complexity of designing and simulating blast action over structures and the development of researches and software at simulation of concrete under explosions.
Also several alternatives of protective concrete panels with several reinforcement detailing are analyzed under blast loading to study panels behavior as sacrificial layers or as original structure walls.
All results were studied to figure which factors can improve panels behavior to achieve best protection against explosions.

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: Date: ../../…

Signature:

Acknowledgments

Starting by thanking allah for the gift of knowledge and science and believe in value of science.

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And gladly want to dedicate this book to my wife and our little baby.