بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / سامية زكى يوسف

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد

BEHAVIOR OF CONCRETE SLABS REINFORCED WITH WELDED WIRE MESH UNDER DIFFERENT VERTICAL LOADS

By

El-Sayed Salah El-Sayed El-Mahdi Ewida

This thesis is submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfillment of the
Requirements of the Degree of
DOCTOR OF PHILOSOPHY
In
Structural Engineering

FACULTY OF ENGINEERING - CAIRO UNIVERSITY
GIZA - ARAB REPUBLIC OF EGYPT
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Under the supervision of

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Title of thesis:

Behavior of Concrete Slabs Reinforced with Welded Wire Mesh Under Different Vertical Loads

Key Words

Solid slab; Welded metal mesh; Crack; Ductility; ABAQUS.

Summary

This thesis aims to study the behavior of solid slabs reinforced with welded metal mesh to develop a design approach for solid slabs reinforced with metallic welded mesh with variable types of loads and continuity of slab edges. To accomplish this objective, eight groups with twenty-four simple and continuous specimens' tests were conducted, comprising concentrated, line, and uniform static load for one-way and two-way solid slab and for one-way continuous solid slabs. This research was designed to investigate the feasibility and effectiveness of employing small welded metal meshes in the construction of structural slabs as low cost and effective structural material.

The experimental data were used for validation of the finite element models that were developed using the ABAQUS software package. The validated models were used as part of a comprehensive parametric study to investigate the effects of a number of design parameters including the effects of material strength, reinforcement geometry and arrangement, and the influence of the load type.

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: El-Sayed Salah El-Sayed El-Mahdi Ewida. Date: / / 2022.

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Acknowledgment

Praise and glory due to Allah whom I attribute my knowledge and success in my life.

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Table of Content.

List of Tables

List of Figures