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BEHAVIOR OF COMPOSITE PRE-FLAT SLABS IN RESISTING PUNCHING SHEAR FORCES

By

WAJDI JABER BANIYA BANIYA

A Thesis Submitted to the Faculty of Engineering at Cairo University
in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
in
Structural Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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Under the Supervision of

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Title of Thesis: Behavior of Composite Pre-flat Slabs in Resisting Punching Shear Forces

Key Words: Composite pre -flat slabs, shear reinforcement, Epoxy, monolithic one layer slabs, punching, codes, proposed equations.

Summary:

The main purpose is the analysis of composite pre-flat slabs with diverse capacities of punching shear reinforcement, throughout an experimental and numerical investigation of composite pre-flat slabs. The additional primary objective was the development of an analytical model that enables accurate predictions of the punching strength, the deformation capacity of composite pre-flat slabs and accounting the influence of critical parameters of punching shears capacity depending on three international cods. Finally, providing the new equations capable of estimating the accurate resistance punching shear forces of composite pre-flat slabs. Specimens categorized into sixteen slabs cast as composite pre-flat slabs (two layers) and four monolithic control slabs cast as a (one layer) slabs. Samples have the same measures (1100 mm x1100 mm) with overall thickness (120 mm), since the composite pre-flat slab layers of (60mm), using reinforced square column with size (150mm x 150mm) and (400mm) for height.

Disclaimer

I hereby declare that this thesis is my 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: Wajdi Jaber Baniya Baniya

Date: 15 /07 /2020

Signature:

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Table of Contents

List of Photos