



SHEAR BEHAVIOR OF SELF-COMPACTING HIGH STRENGTH CONCRETE INVERTED T-BEAMS

BY

Ahmed Mohamed Mamdouh Mohamed Youssef

A Thesis Submitted to the

Faculty of Engineering, 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: **Shear Behavior of High Strength Self-Compacting Concrete Inverted T-Beams.**

Key Words: Shear strength – Self-compacting concrete – High strength concrete

Summary:

The shear behavior of self-compacting reinforced concrete inverted T-beams - with and without diaphragm - was tested in four-point bending configuration considering the thickness of the flange, and the width of the flange. The response of the tested beams was assessed based on the results of crack patterns, load at first cracking, ultimate shear capacity, and failure modes. The Egyptian code of practice -based shear resistance predictions for RC beams were considered. The ECP and ACI code provisions for shear strength and resistance of R.C. can be applied safely to the SCC.

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