Faculty of Engineering
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ELASTO-PLASTIC INTERACTION BUCKLING OF COLD-FORMED SECTIONS

By

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A Thesis

Submitted in Partial Fulfillment for
the Requirements of the Degree of Master of Science
in Civil Engineering

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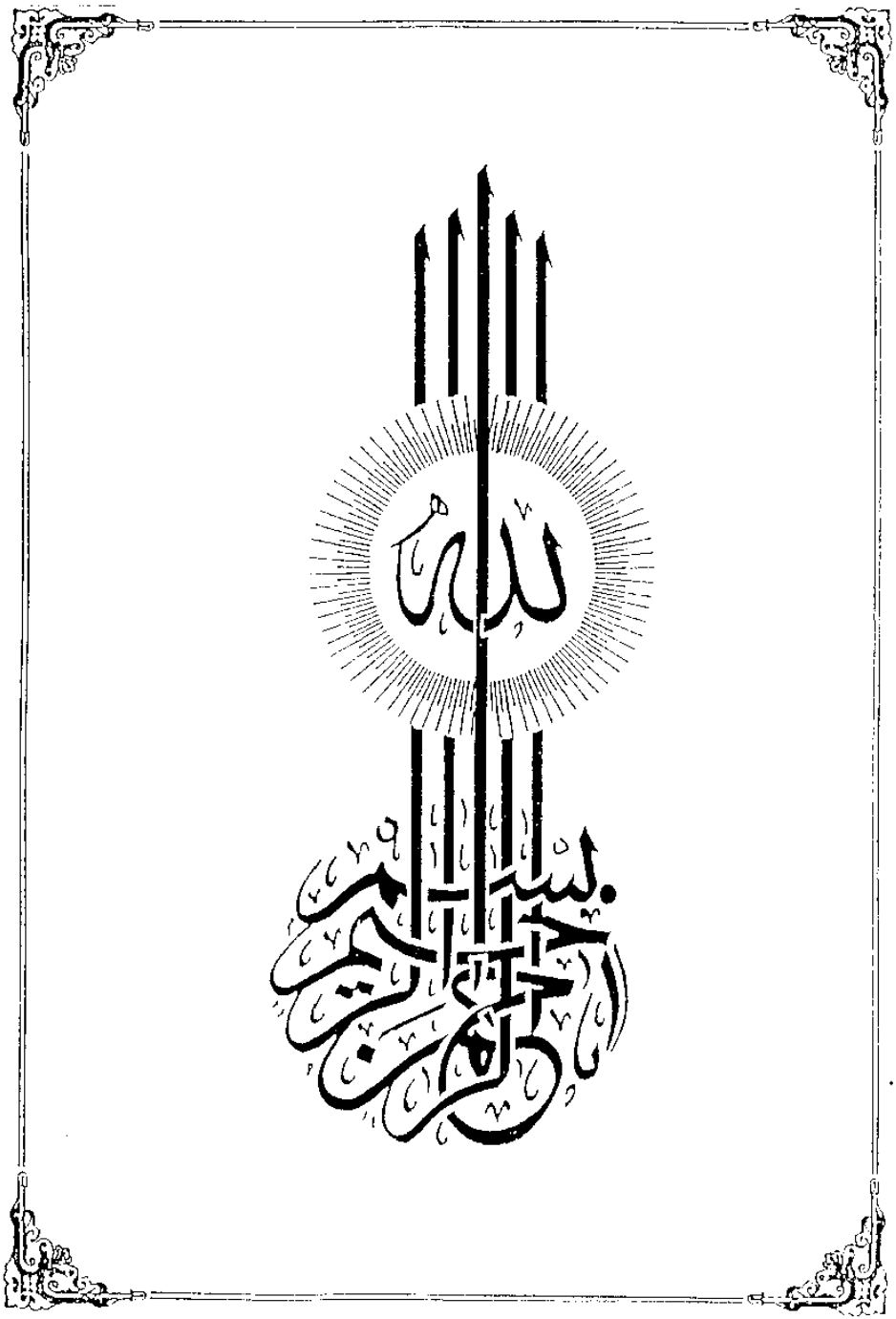

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Abstract of M.Sc. thesis submitted by:

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Elasto-plastic interaction buckling of cold-formed sections

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ABSTRACT

The main aim of this research is to study the non-linear interactive buckling of members having open and closed thin-walled cold-formed sections . These sections are such box section as a model for closed sections and two channels back-to-back , stiffened and unstiffened as open sections .

A finite element model is introduced to study the non-linear interactive buckling of thin-walled cold-formed sections . The present study tries to obtain the critical buckling mode weather local such as flange buckling or web buckling or overall buckling mode . Columns with different end conditions (pin ended , fixed - hinged , fixed - fixed and fixed free) have been studied to investigate elasto-plastic interactive buckling . A parametric study has been performed in order to get the best geometrical properties of the thin sections treated . A comparison has been made between results and different codes of practice to check the accuracy of the results .

STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Master of Science in Structural Engineering.

The work included in this thesis has been carried out by the author in the Department of Structural Engineering, Ain Shams University, from April 1995 to Sep. 1997

No part of this thesis has been submitted for a degree or a qualification at any other university or institution .

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