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BEHAVIOUR OF REINFORCED CONCRETE BLOCK MASONRY
WALLS UNDER CONCENTRATED LOADS

BY

AMR ALI ABDEL-RAHMAN

B.Sc. (Honours) 1986, Structural Division,
Civil Engineering Department, Ain Shams University

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Supervised by

Prof. Dr. Abdel-Hady H. Hosny,
Professor of Reinforced Concrete Structures
Faculty of Engineering,
Ain Shams University.

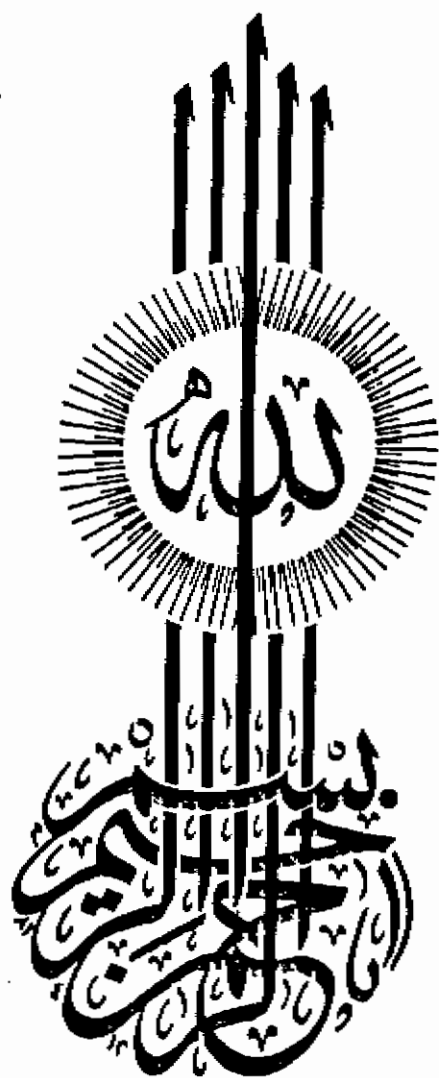


Dr. Mohamed I. Soliman,
Asst. Professor,
Structural Eng. Dept.,
Faculty of Eng.,
Ain Shams University.

Dr. Ahmed S. Essawy,
Lecturer,
Structural Eng. Dept.,
Faculty of Eng.,
Ain Shams University.


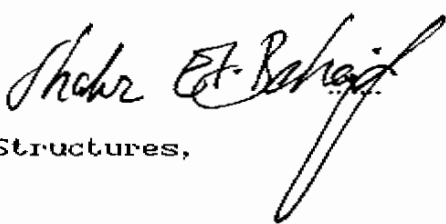

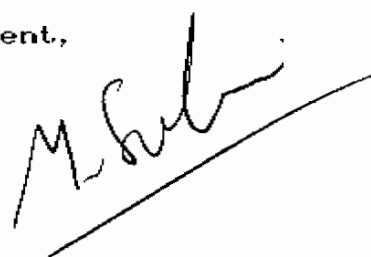
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Examiner's Committee :

Name, Title & Affiliation	Signature
1- Prof. Dr. Mahmoud Nasr, Chairman of the Structural Engineering Department, Professor of Reinforced Concrete Structures, Faculty of Engineering, Cairo University.	
2- Prof. Dr. Shaker El-Behairy, Professor of Reinforced Concrete Structures, Faculty of Engineering, Ain Shams University.	
3- Prof. Dr. Abdel-Hady H. Hosny, (Supervisor), Professor of Reinforced Concrete Structures, Faculty of Engineering, Ain Shams University.	
4- Dr. Mohamed I. Soliman, (Supervisor), Asst. Professor, Structural Engineering Department, Faculty of Engineering, Ain Shams University.	

Date: 1/11/1989

Statement

The dissertation is submitted to Ain Shams University for the degree of MASTER OF SCIENCE in Structural Engineering.

The work included in this thesis was carried out by the author in the department of Structural Engineering, Ain Shams University, from November 1986 to October 1989.

No part of this thesis has been submitted for a degree or a qualification to any other University or Institution.

Date:

Signature: 

Name: Amr Ali Abdel-Rahman.

**TO MY PARENTS, FIANCEE
AND
MY FAMILY**

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NOTATIONS

a	Dimension of element in x direction.
A_n	Net area.
A_s	Area of steel.
b	Dimension of element in y direction.
c	Intrinsic shear strength (cohesion).
$[D]$	Elasticity matrix.
E	Modulus of elasticity.
E_g	Tangent modulus of grout.
E_{gs}	Secant modulus of grout.
f_a	Actual axial compressive stress.
f_b	Actual bending stress.
f_g	Strength of grout in compression.
f_m	Strength of mortar in compression.
f_s	Allowable steel stress.
f_{tb}	Splitting tensile strength of blocks.
f'_t	Uniaxial tensile strength.
f'_c	Uniaxial compressive strength.
F_a	Allowable axial compressive stress.
F_m	Allowable flexural compressive stress.
G	Modulus of rigidity.
h	Effective height of wall.
IRA	Initial rate of absorption.
K_n	Stiffness in the normal direction.
K_s	Stiffness in the shear direction.

$[K]_e$	Element stiffness matrix.
L	Length of joint element.
m_o	Compressive strength of mortar.
M	Bending moment.
n	Modular ratio.
P	Applied force.
t	Effective thickness of wall.
t_m	Mortar joint thickness.
t_v	Actual wall thickness.
u	Displacement in the x direction.
v	Displacement in the y direction.
V	Shear force.
w_o	Unit weight of blocks.
w_g	Unit weight of grout.
Z	Section modulus.
$\alpha_{1,2,\dots,8}$	Coefficients.
α	Reduction factor of the modulus of elasticity.
β	Reduction factor of the modulus of rigidity.
ϵ	Strain.
ν	Poisson's ratio.
$\{\sigma\}$	Stress matrix.
$\{\sigma_{av.}\}$	Average stress matrix.
$\sigma_{1,2}$	Peak principal stresses.
σ_n	Normal stress.
σ_s	Shear bond strength.
σ_{so}	Shear bond stress at failure.

σ_t	Tensile bond strength.
σ_{to}	Tensile bond stress at failure.
τ	Shear stress.
μ	Coefficient of friction.
ϕ	Angle of internal friction.

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