

**CALCIUM SILICATE AND SAND CEMENT  
BRICKWALL UNDER AXIAL LOAD CAPACITY**

**By**

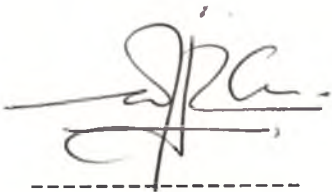
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**Report is submitted as  
the requirement for the degree of  
Bachelor Engineering (Hons) (Civil)**

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Declaration Form.

I, Wan Ruslan Bin Wan Hassan (2000224558) confirm that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

A handwritten signature in black ink, appearing to be 'Wan Ruslan Bin Wan Hassan', written over a horizontal dashed line.

(April 15, 2004)

## ABSTRACT

Commonly, reinforced concrete, timber and steel are used as a frame structure acting as a structural member for load transmittal to the foundation and bricks are used in construction industries only as infill. Bricks can also be used as an external and internal load bearing walls, however the use of bricks as a load bearing structural element is relatively few in Malaysia. With the use of this structural masonry method of construction, faster and cheaper construction can be achieved. The savings in terms of using formwork and reinforcing steel can be made and the rate of construction can be reduced since frames are less or not required at all and the waiting time for the structural concrete to cure can be eliminated.

The effects of using different type of material for brick making in construction environment are suggested to study. In the preliminary studies on identifying the suitability of locally produced bricks as load bearing walls, Kartini & Siti Hawa (2001) found that a unit of calcium silicate bricks and sand cement bricks gave a compressive strength of  $10.30 \text{ N/mm}^2$  and  $8.59 \text{ N/mm}^2$  respectively. So by acting axial load are applied on top of the brick walls built with mortar, in order to determine the structure behavior of the wall as load bearing wall and this is carried out by erecting two units of calcium silicate brick walls and two units of sand cement brick walls of size  $1000\text{mm} \times 1000\text{mm}$ . the thickness of the wall is  $\frac{1}{2}$  brick. However, the study concluded that calcium silicate brick wall showed better performance, with maximum lateral displacement of 4.85 mm, vertical deflection of 14.41mm and ultimate load of 803.45 kN.

# TABLE OF CONTENTS

	<b>PAGE</b>
Title Page	i
Acknowledgement	ii
Abstract	iii
Table of Contents	iv
<b>1.0 INTRODUCTION</b>	<b>1</b>
<b>1.1 General</b>	<b>1</b>
<b>1.2 Objectives</b>	<b>3</b>
<b>1.3 Scope Of Work</b>	<b>3</b>
<b>2.0 LITERATURE REVIEW</b>	<b>5</b>
<b>2.1 Bricks</b>	<b>5</b>
<b>2.2 Brick Types</b>	<b>6</b>
<b>2.3 Sand Cement Bricks</b>	<b>8</b>
<b>2.4 Calcium Silicate Bricks</b>	<b>9</b>
<b>2.5 Bricks Properties</b>	<b>10</b>
<b>2.6 Brick as Load Bearing Walls</b>	<b>15</b>
<b>2.6.1 Load Distribution in Brickwall</b>	<b>16</b>
<b>2.7 Failure Criterias of Brickwall</b>	<b>17</b>
<b>2.8 Mortar Properties</b>	<b>18</b>
<b>3.0 METHODOLOGY</b>	<b>21</b>
<b>3.1 Introduction</b>	<b>21</b>
<b>3.2 Preparation of Samples</b>	<b>21</b>
<b>3.3 Testing Arrangement</b>	<b>23</b>
<b>4.0 RESULTS AND DISCUSSION</b>	<b>27</b>
<b>4.1 Results</b>	<b>27</b>

4.1.1	Ultimate Load	27
4.1.2	Lateral Displacement	32
4.1.3	Stress Strain Relationship	34
4.1.4	Crack Pattern	39
4.2	Discussion	41
5.0	CONCLUSIONS AND RECOMMENDATIONS	45
5.1	Conclusion	45
5.2	Recommendations	45

## REFERENCES

## APPENDICES