

**COMPRESSION BEHAVIOR OF
CONCRETE COLUMN WITH
CONFINEMENT OF CARBON FIBRE
REINFORCED POLYMER (CFRP)**

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Undergraduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Maintaining existing structure for its intended purpose for a prolonged time become a huge challenge since it is exposed to the natural disaster, environment effect and failures. Structure like column become more vulnerable as the longer time passed. The integrity and the safety of the structure prone to collapse and can lead to catastrophic failures if the structures not been treated. Column should be rehabilitated and strengthening by wrapping it with carbon fibre reinforced polymer (CFRP). This study presents experimental study of compressive behavior of the concrete column with CFRP confinement. Total nine circular short column were tested in this study. Three concrete columns with diameter 100 mm and length 200 mm prepared for each group of concrete columns consist of unconfined, fully confined and partially confined. It was found that the fully confinement of CFRP improved the ultimate load by 75% and partially confinement increase with 60% compared with unconfined concrete column. The experimental results show partially and fully confinement of CFRP increase the compressive strength of the specimens. The compressive strength of fully confinement increase with 75% higher than partial confinement 60% improvement when compare with unconfined concrete column. With 38% different of fully confined concrete with partially confined concrete, it stipulated the partially confinement is effective as the fully confinement.

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TABLE OF CONTENTS

	Page
AUTHOR'S DECLARATION	II
ABSTRACT	III
ACKNOWLEDGEMENT	IV
TABLE OF CONTENTS	V
LIST OF TABLES	VIII
LIST OF FIGURES	IX
LIST OF SYMBOLS	XI
LIST OF ABBREVIATIONS	XII
LIST OF APPENDICES	XIII
CHAPTER ONE: INTRODUCTION	1
1.1 Overview	1
1.2 Research Background	1
1.3 Problem Statement	5
1.4 Objectives	7
1.5 Scope of Work	8
1.6 Significance of Study	9
CHAPTER TWO: LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Concrete	11
2.3 Column	12
2.3.1 Modes of Failures in Column Structure	14
2.3.2 Behavior of Short Column	19
2.3.3 Suitability of the Circular Concrete Column	20