



**DEPARTMENT OF BUILDING
UNIVERSITI TEKNOLOGI MARA
(PERAK)**

**THE PROCEDURE OF POST-
TENSIONING WORK
(PRESTRESSED BEAM)**

**Prepared by:
AKMAL ZUHRI BIN JOPERI
2019433558**

ACKNOWLEDGEMENT

Alhamdulillah, praise to Allah, the Most Merciful, the Most Graceful.

I would like to express my heartfelt appreciation to the following amazing individuals for their guidance, advice, and assistance throughout the training period. First and foremost, I'd like to express my gratitude to Mr. Chek for providing me with the opportunity to conduct my training in his esteemed company. His team of professionals on the site project at Uniten open lab facilities which is comprising of En Roslan Bin Said, En Mohd Saleh Bin Kamaluddin, En Aliff Ibrahim Bin Md. Lazim, En Muhammad Qayyim Bin Suhaimi, En Ahmad Azwad, En Muhammad Syazwan Alhafiz Bin Mohd Pahlillah, En. Safwan Bin Mohd Sharuddin, En. Mohd Firdaus Bin Ahmad Rusdi and Mr. Selverkumar have enabled me to learn and develop my understanding, knowledge and feel of real time projects, and the theory involved in analysis of structures, building and civil works. They are also in charge of streamlining and evaluating my training. Furthermore, they have extended their cooperation and assistance in helping me to improve my understanding of construction and site administration procedures, as well as site safety and industry best practises. It is a privilege for me to have the opportunity to 'work' with each of you.

I'd also like to thank all of the lecturers at UiTM who have helped me grow as a student and person. I'd also like to express my heartfelt gratitude to the lecturers who were directly involved in my training. I appreciate the time, effort, encouragement, and ideas that En. Muhammad Naim Bin Mahyuddin, Supervising Lecturer, Dr. Nor Asma Hafizah Binti Hadzaman, Practical Training Coordinator, and Dr. Dzulkarnaean Bin Ismail, Programme Coordinator, have contributed to the successful completion of my training, this report, and the valuable knowledge that have been shared over the last few semesters.

Last but not least, I want to express my gratitude to my loving parents for all of their sacrifices over the years.

Thank you a lot.

ABSTRACT

Concrete post tensioning is without a doubt a difficult and time-consuming construction task. This post tensioning is one of the most important aspects of construction.. The point of doing post tension is because to make the building more stable and sturdy. The elements and method of works varies on site rather than that explained theoretically. This report will discuss about post tensioning work for the beam of the building. This report was conducted for the construction of Uniten Open lab facilities at Lot 30806 Jalan Wawasan, Universiti Tenaga Nasional UNITEN, Mukim Dengkil, Daerah Sepang, Selangor Darul Ehsan. The objective of this report is to analyze about the procedure of post tensioning works (prestressed beam). It also to determine the time that have been used for the construction. This report will also look at the problem and the solution in post tensioning work prestressed beam that would fill the requirement of the project.

CONTENTS	PAGE NO
Acknowledgements	5
Abstract	6
Contents	7
List of Tables	8
List of Figures	9
CHAPTER 1.0 INTRODUCTION	
1.1 Background of Study	10
1.2 Objectives	11
1.3 Scope of Study	12
1.4 Methods of Study	13-14
CHAPTER 2.0 COMPANY BACKGROUND	
2.1 Introduction of Company	15
2.2 Company Profile	16
2.3 Organization Chart	17
2.4 List of Project	18
2.4.1 Completed Projects	19
2.4.2 Project in Progress	20-22
CHAPTER 3.0 CASE STUDY (BASED ON TOPIC OF THE REPORT)	
3.1 Introduction to Case Study	23-26
3.2 identify the Procedure of Post Tensioning Work Prestressed Beam	27-29
3.3 Determine the time of Post Tensioning Work Prestressed Beam process	30
3.4 Identify the problem and solution in Post Tensioning Work Prestressed Beam	31
CHAPTER 4.0 CONCLUSION	
4.1 Conclusion	32
REFERENCES	33

CHAPTER 1.0

INTRODUCTION

1.1 Background of Study

Post-tensioning is a technique used to create prestressed concrete, masonry, and other structural elements. The process of introducing internal forces (or stress) into a concrete or masonry element during the construction process to counteract the external loads that will be applied when the structure is put into use is referred to as prestressing (known as service loads). Internal forces are applied by tensioning high strength steel, which can be done before or after the concrete is placed. Post-tensioning is the process of tensioning steel after it has been placed in concrete.. The purpose of using post tension is to make the structure more stable and sturdy.

They are 4 main types of post tensioning. The first type post tensioning is internal bonded tendons. The Second is internal unbonded tendons. The third is external unbonded tendons. Lastly is ground anchors. However, the aim of this is to discover the internal bonded tendons on beam. This Internal bonded tendons are formed by inserting one or more strands into a metal or plastic duct embedded in concrete. The tendon is 'bonded' to the surrounding concrete by filling the duct with special grout. Internally bonded tendons are installed prior to the pouring of concrete and become embedded in the concrete. This method is commonly used for bridges and heavily loaded beams in buildings; flat internal systems are also a good choice for thin slabs.