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**FINAL PROJECT REPORT
(KJM 565)**

**EFFECT OF HOLES FOR DIFFERENT LAYER OF
COMPOSITE MATERIAL
(EPOXY/POLYPROPYLENE LAMINATES)**

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In the name of ALLAH, the Beneficent and Merciful who has given me the strength and ability to complete this final year project as well.

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MAY ALLAH BLESS ALL OF US.

**Thank You,
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CHAPTER 1

INTRODUCTION

Nowadays composite materials are being commonly used in many industries. The main advantage is that the material properties can be easily tailored to meet the requirements. Another advantage is due to its low weight and low cost while using it. Furthermore the composite material has less manufacturing process involved in industry.

Geotextile polypropylene cloth / epoxy composite material are now used to reinforced concrete beam in structural application in civil engineering. The flexure strength is said to have improved (discussion with project advisor) and also the laminate give surface properties to environmental attach. Due to its low cost polypropylene cloth / epoxy may have other direct engineering application and can be used as solution for other high cost plastic materials.

To complete this research, it is being done in four phases: -

- 1st phase: Specimen Preparation
- 2nd phase: Proceeding test at laboratory.
- 3rd phase: Calculation and analysis.
- 4th phase: Writing report.

In this research, polypropylene cloth / epoxy composite laminates were prepared in laboratory. Then specimens were than drilled with holes of several sizes to determine their properties of notch strength. Two types of lay-up were studied. There are one layer and two layers of composite materials. Flat composite were cut from the sample and subjective to tensile loading. The notch strength of the composite determine experimentally predict using one of the notch strength criteria. This study hope to provide benefit in designing material using composite laminates rules in the future times.