



**A STUDY ON LOW BLOW IMPACT AND RESIDUAL STRENGTH OF
GLASS/EPOXY AND POLYPROPYLENE (PP) POLYMER COMPOSITES**

**SITI FATIMAH BT ABAIT
(2001194938)**

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**Faculty of Mechanical Engineering
Universiti Teknologi MARA (UiTM)**

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ABSTRACT

This project is purposed to study the residual strength of laminated combination of glass fibre/epoxy composite material due to low impact and tensile loadings. With the study result we can find relation ship between the Residual strength of the material and the low impact loading. The results then are compared against each of the composite's residual strength to obtain which of them is the best combination. Ultimately by properly analysing the result, the best fibre layer arrangement had been found.

In this report we are studying two types of fibre arrangement, fibreglass woven and chop strand mat and also polypropylene polymer (PP). For the purpose of comparison, we have produced four possible combination of laminated fibre using this three fibreglass and polymer. Two combinations consist of three numbers of layers arranged in different combination from one and other such as W/C/W and C/W/C, while the others combinations are five layers of PP/W/C/W/PP and PP/C/W/C/PP.

From the tensile test after maximum low impact loading, the highest residual strength is achieved by combination of W/C/W for two layers that the Modulus of elasticity of the material is 659.72 MPa and 74.961 MPa for Tensile Stress. While for five layers the highest residual strength is PP/W/C/W/PP (501.14 MPa for Modulus of Elasticity and 64.5 MPa for Tensile Stress)

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