

# **JUTE/POLYESTER HYBRID COMPOSITE**

**A PROJECT REPORT**

*Submitted by*

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*In partial fulfilment for the award of the Degree*

*Of*

**BACHELOR OF ENGINEERING**

**IN**

**MECHANICAL ENGINEERING**



**PANIMALR ENGINEERING COLLEGE**

**(Autonomous Institution, Affiliated to Anna University, Chennai)**

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## BONAFIDE CERTIFICATE

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The year .....

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## **ABSTRACT**

Experimental investigation of hybrid composites are performed to study the mechanical property using flexural testing and to study the damage. Initiation and development in stitched jute/polyester composites subjected to flexural loading. The natural composite jute is stitched with polyester thread on the areas where stress concentration is more.

The sample is drilled at the centre and the stitch diameter around the hole is varied, Viz. 7 mm around the hole, 8 mm around the hole, 9 mm around the hole, 10 mm around the hole, 11 mm around the hole, 12 mm around the hole, 13 mm around the hole. Flexural test is conducted to obtain the flexural strength of the combination. Effect of variation of stitch diameter is assessed and it is found that the 13 mm diameter stitch increases the flexural strength when compared to the natural fibre composite flexural strength.

These results are compared with the unstitched fully hybridized composite and unstitched natural fibre and it is found that the flexural strength of the stitched composite is increased. Also the flexural strength of laminate plies with various stacking sequences (combination of jute and polyester layers) is taken.

While comparing the strength of specimen having maximum number of stitches around the hole with the strength obtained in specimens with varying stacking sequence, it is observed that its strength is approximately equal to specimen with one layer of polyester at each extreme end (S2).

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