

Chapter 5

STATIC AND DYNAMIC BEHAVIOURS OF COMPOSITE LAMINATE

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ABSTRACT

The use of composites materials made of natural fibres in buildings and automobiles increases more and more. However, the mechanical properties and the mechanical behaviours of these materials depend of the type of natural fibre used as well as of the type of manufacturing process used for obtaining the final part. In this chapter, we are interested in the characterization of the mechanical and thermo mechanical behaviour of composite laminate made of jute/epoxy.

For the mechanical characterization, standard static tests (tensile, shear and bending) are carried out for the identification of the mechanical proprieties. Thanks to the digital image correlation technique, we observe that the mechanical proprieties have important variabilities during the static tests. The impact tests show that these variabilities have few impact on the first force responsible of the first damage during the impact tests. Nevertheless, the maximum forces obtained during impact tests are affected by the variabilities of this material.

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