

**Advances**  
**in**  
**Aircraft Structures**

**Editor**

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# Chapter 9

## Determination of Mechanical Properties of Corrugated Hybrid Composite

Y.Aminanda, N. Ismail

### Abstract

*In this chapter, behaviors of composite corrugated plates subjected to three-point bending tests will be explained. The fabrication process of Jute/epoxy, glass/epoxy and hybrid jute/glass/epoxy plates using hand lay-up method will be detailed. Two types of composites corrugated plates are proposed which are in form of rectangular and trapezoidal. Load-displacement relations will be drawn for the mentioned specimens. As a result, the composite with the best stiffness and excellent performance can be determined and the advantages of having corrugated form will be drawn as well.*

**Keywords:** *Corrugated form, composite, hybrid, natural fiber, bending stiffness.*

### 1. Introduction

Numerous studies have shown that composite materials have superior structural performance in high specific strength (strength to density ratio) and high specific stiffness (modulus to density ratio). However, composites also have some limitations that conventional monolithic do not have. The purpose of this chapter is to investigate the mechanical properties that exhibit by the composites materials such as jute/epoxy, glass/epoxy and hybrid jute/glass. Those specimens are tested under three point bending test. Since, the interest of the study is to study the