Advances in Aircraft Structures

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Experimental Study of the Strength of Sandwich Structure with Honeycomb Core

Y. Aminanda, Hamidah Abu Hasan

Abstract

In this study, a composite sandwich structure with Nomex honeycomb core and aluminum metallic skin was proposed, fabricated and tested. The behavior of these structures under compression and three point bending test was investigated. Compression testing was done to find the mechanical properties of the core. In this study, it proposed methodology to simulate the behavior of sandwich structure subjected to three bending point test which starts with the behavior study of the components of sandwich structure which are honeycomb core and metallic skin. The uniform compression on Nomex honeycomb alone and standard tensile test on metallic skin are performed to determine the behavior of honeycomb and skin. The results are used for the behavior of sandwich structure subjected to 3 points bending load. The parameters study will be performed by varying the thickness of core and skin for example to investigate its influence to the strength of sandwich structure.

Keywords: *Sandwich, honeycomb, compression, 3 points bending, indentation.*

1. Introduction

Sandwich structures occupy a large proportion of composite material design. They appear in almost all applications. Historically they were the first light and