

MANUFAKTUR DAN UJI KEKUATAN BENDING HEXAGONAL HONEYCOMB SANDWICH DENGAN CORE BERBAHAN AKRILIK

Oleh:

ILHAM CAHYANA PUTRA

NIM.16050096, Email: ilhamcputra86@gmail.com

Program Studi Teknik Dirgantara, Institut Teknologi Dirgantara Adisutjipto
(ITDA)

Jl. Janti Blok-R Lanud Adisutjipto Yogyakarta

ABSTRAK

Komposit sandwich menjadi salah satu opsi material yang mulai sering dipakai pada beberapa industri termasuk dalam industri penerbangan yang disebabkan karena komposit sandwich mempunyai kekakuan dan kekuatan yang tinggi dengan bobot yang ringan. Penelitian ini bertujuan untuk mengetahui kekuatan mekanis hexagonal honeycomb sandwich serat fiberglass woven roving dengan core akrilik terhadap kekuatan bending berdasarkan arah serat face layer/skin.

Penelitian diawali dengan proses pembuatan komposit face layer/skin menggunakan metode vacuum infusion dengan variasi arah sudut serat, core akrilik dengan laser cutting. kemudian hexagonal honeycomb sandwich dipotong sesuai ukuran untuk pengujian bending pada ASTM C393.

Dari hasil pengujian bending dapat disimpulkan Hexagonal Honeycomb Sandwich dengan serat fiberglass woven roving dan core akrilik diketahui maksimum beban yang dapat diterima sekitar 1,13KN dengan rata-rata 1,05KN.

Kata Kunci: Serat fiberglass woven roving, Akrilik, Uji bending, Hexagonal honeycomb sandwich

MANUFACTURING AND TESTING OF BENDING STRENGTH HEXAGONAL HONEYCOMB SANDWICH WITH ACRYLIC CORE

By:

ILHAM CAHYANA PUTRA

NIM.16050096, Email: ilhamcputra86@gmail.com

Program Studi Teknik Dirgantara, Institut Teknologi Dirgantara Adisutjipto
(ITDA)

Jl. Janti Blok-R Lanud Adisutjipto Yogyakarta

ABSTRACT

Sandwich composites are one of the material options that are increasingly being used in several industries, including the aviation industry, because sandwich composites have high stiffness and strength with light weight. This study aims to determine the mechanical strength of hexagonal honeycomb sandwich Woven Roving fiber with acrylic core on bending strength based on variations in the direction of the fiber face layer/skin.

The research begins with the process of making face layer/skin composites using the vacuum infusion method with variations in the direction of fiber angles, acrylic cores with laser cutting. then the hexagonal honeycomb sandwich is cut to size for bending testing on ASTM C393.

From the results of the bending test, it can be concluded that Hexagonal Honeycomb Sandwich with fiberglass woven roving and acrylic core is known the maximum acceptable load is around 1.13KN with an average of 1.05KN.

Keywords: Woven roving fiberglass, Acrylic, Bending test, Hexagonal honeycomb sandwic