



Enhancements of Tow-Steering Design Techniques: Design of Rectangular Panel Under Combined Loads

By Brian F. Tatting

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 42 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. An extension to existing design tools that utilize tow-steering is presented which is used to investigate the use of elastic tailoring for a flat panel with a central hole under combined loads of compression and shear. The elastic tailoring is characterized by tow-steering within individual lamina as well as a novel approach based on selective reinforcement, which attempts to minimize compliance through the use of Cellular Automata design concepts. The selective reinforcement designs lack any consideration of manufacturing constraints, so a new tow-steered path definition was developed to translate the prototype selective reinforcement designs into manufacturable plies. The minimum weight design of a flat panel under combined loading was based on a model provided by NASA-Langley personnel and analyzed by STAGS within the OLGA design environment. Baseline designs using traditional straight fiber plies were generated, as well as tow-steered designs which incorporated parallel, tow-drop, and overlap plies within the laminate. These results indicated that the overlap method provided the best improvement with regards to weight and performance as compared to traditional constant stiffness monocoque panels, though the laminates did not measure...



READ ONLINE
[5.87 MB]

Reviews

A top quality publication along with the font used was intriguing to read. I really could comprehend everything using this written e ebook. Its been designed in an remarkably straightforward way and it is only after i finished reading through this publication by which basically altered me, modify the way i believe.

-- **Cathrine Larkin Sr.**

Very useful to all of group of people. I actually have read through and so i am certain that i will planning to study yet again once again down the road. I am just very easily can get a satisfaction of looking at a created book.

-- **Mark Bernier**