



## Fatigue of Composite Material Beam Elements Representative of Wind Turbine Blade Substructure (Paperback)

By -

Bibliogov, United States, 2012. Paperback. Condition: New. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.The database and analysis methods used to predict wind turbine blade structural performance for stiffness, static strength, dynamic response, and fatigue lifetime are validated through the design, fabrication, and testing of substructural elements. We chose a test specimen representative of wind turbine blade primary substructure to represent the spar area of a typical wind turbine blade. We then designed an I-beam with flanges and web to represent blade structure, using materials typical of many U.S.-manufactured blades. Our study included the fabrication and fatigue testing of 52 beams and many coupons of beam material. Fatigue lifetimes were consistent with predictions based on the coupon database. The final beam specimen proved to be a very useful tool for validating strength and lifetime predictions for a variety of flange and web materials, and is serving as a test bed to ongoing studies of structural details and the interaction between manufacturing and structural performance. The beam test results provide a significant validation of the coupon database and the methodologies for predicting fatigue of composite material beam elements.

DOWNLOAD



READ ONLINE  
[ 2.65 MB ]

### Reviews

*It is an awesome publication which i actually have ever read through. it had been writtern really properly and valuable. I found out this book from my i and dad recommended this pdf to discover.*

-- Doyle Schmeler

*This book is definitely not simple to begin on studying but quite fun to see. I actually have read and that i am sure that i will gonna read through yet again once again in the foreseeable future. It is extremely difficult to leave it before concluding, once you begin to read the book.*

-- Brennan Koelpin