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## **HOW GEOMETRIC DETAILS CAN AFFECT THE STRENGTH OF ADHESIVE LAP JOINTS**

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### **Abstract**

The durability of adhesively bonded joints - when utilized as blade attachments - has a significant impact on the performance of wind turbines. Accordingly, there is interest in determining how geometric details affect the strength of these joints. Finite element analyses were performed to aid in the selection of three composite-to-metal joint geometries for compressive axial testing. Both monotonic and low-cycle fatigue tests were conducted. Analysis and testing of these joints provide insight into the effects of adding extra adhesive to the end of the bond or tapering the metal adherend. The issue of whether the relative performance of different joints in monotonic tests can be used to predict the relative fatigue strength of these joints is also addressed.