عنوان مقاله:

A review on stress distribution, strength and failure of bolted composite joints

محل انتشار:

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خلاصه مقاله:

In this study, analytical models considering different material and geometry for both single and double-lap bolted joints were reviewed for better understand how to select the proper model for a particular application. The survey indicades that the analytic models selected for the adhesively single or double bolted lap joints, as well as T, scarf, and stepped joints, with linear material properties are mostly two dimensional and the studies on stress distribution and/or failure of the joint are performed either experimentally, analytically or by finite element method. The results seem to be generally accurate and adequate. Additionally, it was shown that any increase in the bolt-hole clearance leads to an increase in bolt rotation, as well as a decrease in bolt-hole contact area, and hence, a reduction in joint stiffness. Moreover, studies on hybrid joints have revealed that the proper choice of adhesive material in conjunction with bolts or rivets in a joint, allows for significant increase in the static and fatigue strength compared to similar pure bonded joints. Additionally, the results on hybrid scarf joints showed that it is vital to place fasteners closer to the ends of the overlap to suppress the peak peeling stresses and hence, delay the effects of early crack initiation in the adhesive ...layer

کلمات کلیدی:

Plated bolted joints, Nonlinear Behavior, design, fatigue strength and failure