Research avd discussion of patching aircraft structureby compound material

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ABSTRACT

This study is to explore the effectiveness of bonding factors for adhesive material and treatment by patching one-side composite material and touching up the test sample of metal structure, tests of structure fatigue and life durability will be conducted between test group and control group to screen the effective parameters of factors. The bonding intensity of adhesive shows its significance effectiveness with adhesive category and surface treatment individually, environmental factor is also incorporated to adopt the proper adhesive and the way of surface treatment in order to meet the intensity requirement. Both tests for equal amplitude and standard amplitude of vibration on specified loading on patch or non-patch shows composite patch can share less force loading to 70 percent of initial structure loaded. The average effectiveness on intensity of equal amplitude test for patch bonding is eight times of non-patch bonding, and it is three times of non-patch bonding for standard amplitude test. This result indicates better touch up for aging aircraft structure which exists lateral crack on sin pore.

Keywords : composite material、fatigue test、life durability

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