Riveted lap joints in aircraft fuselage: design, analysis and properties

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Abstrak

Fatigue of riveted lap joints between aluminium alloy sheets, typical of the pressurized aircraft fuselage, is the major topic of the present book. The richly illustrated and well-structured chapters treat subjects such as : structural design solutions and loading conditions for fuselage skin joints, relevance of laboratory test results for simple lap joint specimens to riveted joints in a real structure, effect of various production and design related variables on the riveted joint fatigue behaviour, analytical and experimental results on load transmission in mechanically fastened lap joints, theoretical and experimental analysis of secondary bending and its implications for riveted joint fatigue performance, nucleation and shape development of fatigue cracks in riveted longitudinal lap joints, overview of experimental investigations into the multi-site damage for full scale fuselage panels and riveted lap joint specimens, fatigue crack growth and fatigue life prediction methodology for riveted lap joints, residual strength predictions for riveted lap joints in a fuselage structure. The major issues of each chapter are recapitulated in the last section.