

조합하중을 받는 섬유복합재료의 파손기준

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Failure Criteria of Fibrous Composite under Combined Stress

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Key Words: Combined Stress(조합응력), Failure Strength(파손강도), Fibrous Composites(섬유복합 재료), Fiber Angle(섬유각)

Abstract : A general failure criterion for fibrous composites under combined stress is developed in the paper. It is based on the form of Tsai-Hill's theory. Predicted results are compared throughout all four quadrants with experimental data. Present theory predicts observation quite well at the higher values of shear stress where Tsai-Hill theory become too conservative.

Fillet 용접시편의 일축인장 및 굽힘 피로수명과 용접부 피로파단시 스트레인 변화 연구

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A study on the fatigue life of the tensile and bending fatigue test and the strain during the fatigue fracture on the fillet welded specimens

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Key Words: Fatigue life(피로수명), Weld specimen(용접시편), Strain(변형률), Roughness(거칠기), Morphology(모폴로지)

Abstract : This study investigates the fatigue lives of SM490A material(base metal) specimens and fillet weld specimens, which are made same material and weld method for the railway vehicle, during the tensile and bending fatigue test. These fatigue lives have a difference, the fatigue lives of weld specimen are shorter than those of base metal. We measured the strains on the weld positions of the specimens during the fatigue test for investigation of crack initiation and crack growth. In these result, we could find the information of the crack initiation position on weld bead and the history of crack growth. Also we knew that the fatigue crack initiation cycles and the changes of the strain which were affected the fractured surface roughness and morphology.