

9Cr-1Mo-1V강의 Creep-Fatigue 변형에 따른 기계적 성질 변화

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Mechanical Behavior of 9Cr-1Mo-1V Steel to Creep Fatigue Deformation

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Key Words: Creep-Fatigue(크리프-피로), Load Control(하중 제어), Hold Time(유지 시간).

Abstract : Creep-fatigue tests with trapezoid load wave were performed on a 9Cr-1Mo-1V steel at high temperature(550°C). Trapezoid load wave is considering about hold time for creep effects. we could find out some information in the relationship between number of cycles to failure and hold time. The number of cycles to failure depended on hold time. The cyclic behavior of 9Cr-1Mo-1V steel was characterized by cyclic softening with increasing number of cycles in high temperature. Also we could observe some cavity in the specimens. The size of cavity was different from each hold time.

용접구조물의 잔류응력분포에 관한 연구

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A Study on Residual Stress Distribution of Welded Joints

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Key Words: EB welding(전기용접), laser welding (레이저용접)

Abstract : Wings for defense industry such as fighters, missiles, and rockets should have no deformation or damage on the structure, strength, and hardness safety of constituted part and the structures near to the bodies. The structures of existing wings had holes for light weight and plates and frames were fixed with rivets or screws, thus, there were difficulties and limits in light weight. In this study, an improvement was made in current joint methods through EB welding and laser welding for light weight of wings and welding strength was measured through strength test. In addition, finite element analysis was performed for welding process so as to induce optimum welding condition.