극저온용 복합재료의 접착부 강도에 미치는 표면처리 효과에 대한 연구

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Effect of Surface Treatment on Adhesive Bonding Strengh of Composite Material for Cryogenic Application

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Abstract

The secondary barrier of cargo containment for membrane LNG tank is composed of composite materials such as rigid triplex (rigid secondary barrier, RSB) and flexible triplex (flexible secondary barrier, FSB). RSB and FSB are adhered to each other using an epoxy adherent and the quality of the secondary barrier depends on the bonding strength between them. The bonding strength between RSB and FSB is greatly influenced by the surface condition of RSB prior to joining. In this study, the effect of surface condition prior to joining on the joint strength and the fracture mode occurred between RSB and FSB have been examined in order to establish a proper surface treatment method for improving the bonding strength at the temperature of -170°C.

Key Words : Bonding strength, Surface treatment, Triplex