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The Application of A3003/SUS304L Clad Material Produced Using Vacuum Roll Bonding to LNG Carrier

[Koichi Sato](#), [Motoki Tatani](#) and [Taizo Yoshida](#)

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Summary: Tanks of a spherical tank type LNG carrier are supported by the cylindrical shells by the name of "skirt". In the skirt, aluminum alloy A5083 having good low temperature properties is used for the upper part of the skirt connected to stainless steel SUS304 having low thermal conductivity is used for the lower part. In the connection, STJ (Structural Transition Joint) is necessary since the two materials cannot be directly welded. In the previous studies, A3003/SUS304L Clad Material Produced using Vacuum Roll Bonding has been proposed for the STJ and static strength and fracture strength have been investigated. In this paper, the new STJ is further studied for practical application to LNG Carrier, including fatigue test and installation in a ship in service. As a result, long-term integrity of the new STJ with lower manufacturing cost has been confirmed.

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