

HARDNESS OF FRICTION STIR WELDED JOINTS OF AA6061-T6 ALUMINUM ALLOY

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ABSTRACT

Friction stir welding (FSW) is a solid-state joining process which has emerged as an alternative technology applied in joining of high strength alloys that cannot be welded easily by conventional techniques. The process is applicable to aerospace, shipbuilding, aircraft and automotive industries. One of the key benefits of this new technology is that it allows easily welding of different aluminium alloys. The base material investigated is AA6061-T6 aluminium alloy. The microhardness analysis on the cross-section of the joint showed fairly small changes; however, after the artificial ageing process a hardness increase was detected. The hardness modification has revealed partial supersaturation in the material and higher precipitation hardening of the joint.

KEYWORDS: FSW, AA6061-T6, hardness.

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