

عنوان مقاله:

Effect of Processing Parameters on Properties of Friction Stir Welded Joints of Aluminium Alloys AA۷۰۷۵-T۶۵۱ and AA۶۰۶۱-T۶

محل انتشار:

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خلاصه مقاله:

In the present investigation the mechanical behaviour of AA۷۰۷۵T۶۵۱ and AA۶۰۶۱T۶ aluminium alloys plates joined by friction stir welding (FSW) were evaluated. The effects of weld process parameter like tool rotation speed ۶۵۰-۱۰۰۰ rpm and weld speed ۳۰-۴۰mm/min with square trapezoidal pin profile on mechanical properties were investigated. The welded joints were tested by means of by X-ray radiography, tensile, hardness and optical microscopy testing. The radiography revealed the presence of internal in FS welds and observed that increasing transverse speed increases the occurrence of weld defects. The hardness was found to be mixed effect with respect to tool rotations and transverse speed for similar FSW joints. But in dissimilar FSW joints, hardness decreases with increasing tool speed and weld speed and it was strongly affected by precipitate distribution. Difference in grain size and distribution was .observed for different ranges of rotation and weld speed

کلمات کلیدی:

FSW, AA۷۰۷۵ and AA۶۰۶۱, Mechanical Properties, Microstructures

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