

Experimental and Investigation of Aluminium Metal Aa2219 using Friction Stir Welding and to Evaluate the Mechanical Properties

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Abstract: Friction Stir Welding (FSW) is an environment friendly solid-state joining technology that uses a rotating tool to generate frictional heat and plastic deformation with mixing of the soft material by the pin along the welding line. The advantages are low distortion, lack of traditional defects commonly found in fusion welds and high joint efficiency. The paper focuses on microstructure evolved after welding and the effect of welding process is discussed for aluminum alloy 2219. This alloy is selected because of high strength and good resistance to stress corrosion cracking at cryogenic temperature. The optimum process condition for FSW is determined with microstructural and mechanical properties. It is shown that the FSW provides higher performance for this alloy than the conventional welding technology

Keywords: Friction stir welding, Aluminium alloys, Cylindrical tool, L9 Orthogonal array.

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