

SIMILAR AND DISSIMILAR FRICTION STIR WELDING OF AA7075

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ABSTRACT

Friction stir welding (FSW) is a new solid-state joining process. It can be applied to all aluminum alloys without hot cracking, porosity or other common problems associated with fusion welding process of aluminum. Thermal effects such as contraction and distortion are also avoided due to the absence of fusion. The absence of arc results also in clean joining process with no ultraviolet or electromagnetic radiation hazards. No spatter or fumes or other pollutants in this joining process, FSW. Excellent mechanical properties of the friction stir welded joints promoted its applications in various industrial fields such as aerospace, automotive, maritime, ...etc. Aluminum alloy 7075 has special importance due to its high strength properties which promoted its usage in aerospace industry. Friction stir welding of AA7075 received considerable emphasis in the literature. The possibilities of joining dissimilar metals using FSW encouraged investigators to build dissimilar joints between AA7075 and other metals including aluminum alloys, magnesium and others.

KEYWORDS: Friction Stir Butt Welding, Aluminum Alloys, Welding Research