ABSTARCT

The joining of dissimilar aluminium alloy plates(AA6082 & AA5052) of 4mm thickness were carried out by friction stir welding (FSW) technique. Three different tool designs have been employed to analyze with constant rotation speed ,traverse speed and axial force. In FSW technique,the process of welding of the base material, well below its melting temperature, has opened up new trends in producing efficient joints. Effect of welding speed on bead geometry, hardness distribution and tensile properties of the welded joints were investigated. By varying the tool defect free and high efficiency welded joints were produced. From this research work, it is inferred that the rotational speed of 1000 rpm, traverse speed of 20mm/min and axial force 10 KN with threaded tool profile pin, is considered to be the most efficient. Followed by threaded tool pin profile.

Keywords: FSW ,AA6082,AA5052,Tensile strength, Hardness, Beadprofile.