



Friction Stir Welding of 6063-T6 Aluminum Alloy



Aluminum can be joined using a variety of welding processes such as Arc welding processes like GMAW or GTAW, Spot welding, Friction welding etc. The major concern while joining aluminum is to minimize the stresses produced during joining. While joining, mechanical properties as well as micro structure needs to be controlled as a little alteration of these properties leads to premature failure of welding structures which is a matter of prime concern and should be evaluated from the safety point of view of welded structures.

The present work thereby aims to compare the joining of Aluminum alloy 6063-T6 by Friction Stir Welding and Tungsten Inert Gas Welding using different parameters on the basis of mechanical properties of the welds. In this study TIG welding of aluminum was carried out using different current parameters like 110 amp, 130 amp, 150 amp and Friction Stir Welding was carried out at various rotation speeds and feed rate i.e. 700 rpm and 25 mm, 700 rpm and 30mm, 800 rpm and 30 mm. The welded test coupons were then tested for mechanical properties and important conclusions were drawn.