

## Abstract Details

**Title:** Influence of tool rotational speed in dissimilar friction stir welding of aluminium alloys aa8011 and aa5754 in t-joint configuration.

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**Abstract :** Friction stir welding has been successfully applied to join materials possessing application in various industrial sectors. Particularly, the T-joint configuration finds application in the aerospace and automotive sector. Thus, the aim of the present work is to study the effect of tool rotational speed on dissimilar Friction Stir Welding (FSW) of T-joint configuration. Aluminium alloys AA8011 and AA5754 having 3 mm thickness were used as base materials. Post welding, microstructural analysis and its correlation with micro-hardness was performed to study the effect of tool rotational speed, keeping the other welding parameters constant. Microstructural analysis was performed for both the skin and the stringer plates. Three distinct zones were realized, namely Stir zone (SZ), Thermo-mechanically affected zone (TMAZ) and Heat affected zone (HAZ). Tensile tests were also performed to examine the load-bearing capacity of the welded joint. The effect of rotational speed on weld defects has also been addressed in the current study.

**Keywords:** Aluminium alloys; T-joint; Dissimilar Welding; Friction Stir Welding; AA8011; AA5754.