

## Effect of Process Parameters on Mechanical Properties of Friction Stir Welded Aluminium Alloy Joints Using Factorial Design

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**Abstract :** In the present work an effort has been made to study the influence of the welding parameters on tensile strength of friction stir welding of aluminum. Three process parameters tool rotation speed, welding speed, and shoulder diameter were selected for the study. Two level factorial design of eight runs was selected for conducting the experiments. The mathematical model was developed from the data obtained. The significance of coefficients and adequacy of developed models were tested by 't' test and 'F' test respectively. The effects of process parameters on mechanical properties have been represented in the form of graphs for better understanding.

**Keywords :** friction stir welding, aluminium alloy, mathematical model, welding speed

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