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OPTIMIZATION OF TIG WELDING TENSILE STRENGTH OF AISI 304 USING ANOVA

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ABSTRACT

To improve the mechanical properties of the weld structure and to reduce the manufacturing costs, the welding parameters of TIG welding process needs to be optimized. The present investigation focuses on the optimization of the procedure parameters of TIG joining procedure. SS AISI 304 has been taken as a base metal having dimensions of length 200 mm width 50 mm and thickness 3 mm, which is butt-welded by the TIG welding method. Selection of input parameters is based on their significance effect on the mechanical properties of weld structure. The selected input parameters are Current, Voltage, Root gap and Gas flow rate. The number of experiments carried out is 27, which is designed by Taguchi L27 orthogonal array using 4 factors and 3 levels by MINITAB.Conducting tensile strength test checks the final weld quality.

Keywords: TIG Welding, AISI 304, Minitab, Tensile Strength