

(54) Title of the invention : EXPERIMENTAL STUDIES USING PULSED AND NON-PULSED CURRENT GTAW TO INVESTIGATE THE WELDING CHARACTERISTICS OF ALUMINIUM ALLOY (6082) WELDMENTS

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(57) Abstract :  
 The use of aluminium and its alloy 6082 in many aerospace applications is attracting a lot of attention. Aluminium is fastened using both pulsed and non-pulsed gas tungsten arc welding. Examined were the effects of varying aluminium Al 6082 material thicknesses and pulsed frequency variations on the quality of the welded sample. Al 6082 samples with 3 mm and 6 mm thickness were welded in the current study utilising both pulsed and non-pulsed current welding techniques. During the experiment, 5Hz and 10Hz pulsed frequencies were used. When radiography, liquid penetrating test, and mechanical testing according to ASTM standards were performed on the welded samples, no faults in the welded joint were discovered. The strongest points were found in non-pulsed weldments at lower thickness and pulsed weldments at higher thickness.

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