

HEAT TREATMENT AND WELDING EFFECTS ON MECHANICAL PROPERTIES AND MICROSTRUCTURE EVOLUTION OF 2024 AND 7075 Aluminum ALLOYS

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Abstract: Aluminum alloys are sensitive to hot cracking during the welding operation, both liquidation cracking in the heat affected zone (HAZ) and solidification cracking in the weld can occur. The GTA Welding results of aluminum alloys 2024 T3 and 7075 T6 for 2 mm plate thickness with different parameters of welding are presented in this paper. Before welding, different alloys were heat treated at different temperature to follow the evolution of microstructure and mechanical properties. After welding, the strength of the materials in heat affected zone (HAZ) is reduced. This reduction on properties is due to the different phenomenon that occurs during welding

Keywords : heat treatment, Aluminium alloys welding, hardness, Precipitation, tensile strength, yield strength, Microstructures