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Aluminium shield metal arc welding (SMAW) metallographic and mechanical evaluation for boat repair

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Resumo:

Aluminium Shielded Metal Arc Welding (SMAW) has garnered significant attention in the welding industry due to the unique challenges and opportunities for repair in naval industry. This paper explores the intricacies of aluminium SMAW, focusing on its distinct characteristics, welding process parameters, the challenges encountered during welding and the new pulse power sources for SMAW. It discusses the influence of welding parameters such as current, voltage, travel speed, pulse, frequency and electrode angle on the weld quality and efficiency. In this study, the aluminium SMAW was evaluated with macrographic analyses, Vickers hardness, tensile test of fillet welds. The SMAW pulse power source really presented a game changed for outdoor welding repair for boats.