

عنوان مقاله:

Advanced Manufacturing and Eco-friendly Welding Between AISI ۴۰۹ Finned to High Pressure T۲۲ Boiler Tube by
HFRW Clean Energy

محل انتشار:

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خلاصه مقاله:

In this paper, advanced manufacturing and eco-friendly welding between AISI ۴۰۹ finned to high pressure T۲۲ boiler tube produced by "High-frequency resistance welding (HFRW)" process has been studied. The current development in the power generation industry is HFRW clean energy contributes to the resolution of the greenhouse effect. HFRW technology was implemented on actual samples by changing multiple parameters. Meanwhile metallography of weld bond, tensile strength and hardness tests were performed on several sections of the samples according to international standard finned tube. The diffusion zone indicating the schematic of weld width and weld depth of finned tube observed under the scanning electron microscopy (SEM) which is used for analyses width are that the weld width must be $\geq 90\%$ of fin thickness which can be calculated at the weld interface, with applying optimum welding parameters. Moreover, as the pitch and fin thickness are reduced, the output transfer surface treatment in final process diminished. Hence, the parametric optimization HFRW and the higher quality of finned tube welding bond is revealed by the best conditions of fin pitch.

کلمات کلیدی:

Advanced Manufacturing, High-frequency, Resistance Welding, AISI ۴۰۹, T۲۲ Tube

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