

Effect of Welding Process on Microstructure and Mechanical Properties of Duplex Stainless Steel Welds

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Abstract : The purpose of this study is a comparison between the effect of two electrical arc welding processes, on the structural and mechanical behavior of 2205 duplex stainless steel weldments, the first one is the manual process GTAW and the second one is the automatic process SAW. This effect has been identified and examined in the different welding area namely, the base metal BM, the heat affected zone HAZ and the weld metal WM, using optical metallographic techniques and mechanical methods by hardness tests.

Keywords : duplex stainless steel, welding, microstructure, mechanical properties