Effect of the submerged arc welding parameters on the mechanical properties of a micro-alloyed X80 steel pipe

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Abstract

In this paper, the effect of welding parameters (current, voltage and speed of welding) on the mechanical properties (tensile and impact) of heat affected zone (HAZ) in submerged arc welding of a micro-alloyed X80 steel pipes was investigated. Evaluation of laboratory results showed that the current, has a positive effect on the strength (yield and tensile) and a negative effect on the toughness. Increase of voltage, increases the width of the HAZ and reduces the strength and the toughness of the specimen. The strength and the toughness are significantly improved by increasing the welding speed.

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