

Investigation of Fusion Zone Microstructures in Plasma Arc Welding of Austenitic Stainless Steel (SS-304L) with Low Carbon Steel (A-36) with or without Filler Alloy

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Abstract : Plasma arc welding technology is used for welding SS-304L with A-36. Two different optimize butt welded joints were produced by using austenitic filler alloy E-309L and with direct fusion at 45 A, 2mm/sec by keeping plasma gas flow rate at 0.5LPM. Microstructure analysis of the weld bead was carried out. The results reveal complex heterogeneous microstructure in austenitic base filler alloy sample where as full martensite was found in directly fused sample.

Keywords : fusion zone microstructure, stainless steel, low carbon steel, plasma arc welding

Conference Title : ICMMSE 2014 : International Conference on Manufacturing and Materials Science and Engineering

Conference Location : London, United Kingdom

Conference Dates : October 24-25, 2014