

Study of Microstructure of Weldment Obtained by Submerged Arc Welding (SAW) on IS 2062 Grade B Mild Steel Plate at Zero Degree Celsius

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Abstract : Present experiment has been carried out to study the microstructure of weldment obtained by submerged arc welding on mild steel plate at zero degree Celsius. To study this, bead on plate welding is done by submerged arc welding on the sample plate of heavy duty mild steel of designation IS 2062 grade B, fitted on the special fixture ensuring the plate temperature at zero degree Celsius. Sixteen numbers of such samples are welded by varying the most influencing parameters viz. travel speed, voltage, wire feed rate and electrode stick-out at four different levels. Taguchi's design of experiment is applied by selecting Taguchi's L16 orthogonal array to restrict the number of experimental runs. Cross sectioned samples are polished and etched to view the weldment. Finally, different zone of the weldment is observed by optical microscope. From the type of microstructure of weldment it is concluded that submerged arc welding is feasible at zero degree Celsius on mild steel plate.

Keywords : Submerged Arc Welding, zero degree Celsius, Taguchi's design of experiment, microstructure of weldment

Conference Title : ICMEDA 2015 : International Conference on Mechanical Engineering Design and Analysis

Conference Location : Paris, France

Conference Dates : January 23-24, 2015