

Study of defects in X70 welds by NDT techniques

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Abstract : Despite having extensive reference of tungsten arc welding process, publications number which describes relationships between different TIG welding parameters is very low. In This paper, we presents a new approach to optimize of TIG welding parameters by non destructive testing system in order to determine a total number of weld defects for each weld parameter. Radiographic image processing and ultrasonic techniques are used for evaluation of two parameters TIG welding of API X70 High Strength Low Alloy (HSLA). Increasing welding current from 75 to 150A and welding frequency from 2 to 6 Hz causes radical changes in the nature and number of welding defects. A better combination between welding current and welding frequency is obtained for 120 A and 4 Hz.

Keywords : TIG welding, radiographic, Ultrasonic, welding defect, welding parameter, X70 steel