Indirect Measurement of Effective Throat Thickness in T-joint Weld by Ultrasonic Method Phased Array

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The article deals with non-destructive measurement of the effective throat thickness of fillet weld with deep penetration in T-joint. Ultrasonic Phased Array technology is used to indirectly measurement of effective weld throat thickness. Phased Array ultrasonic systems utilise multi-element probes, which are individually excited under computer control. By exciting each element in a controlled manner, a focused beam of ultrasound can be generated. Software enables the beam to be steered. Two and three dimensional views can be generated showing the sizes and locations of any flaws detected. The results of Phased Array ultrasonic measurements are compared with the real results obtained from the real macrostructural analysis. The methodology is appropriate for verifying compliance with the design weld throat thickness in the production of steel structures.

Keywords: Ultrasonic testing, T-joint, Phased Array

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