



Presented at NDE2002, to predict. assure. improve. www.nde2002.org
National Seminar of ISNT, the Indian Society for Non Destructive Testing
Hotel Taj Connemara and Raja Muthiah Hall, Chennai, 05. – 07. 12. 2002

Influence of Heat Input on Ultrasonic Evaluation Sensitivity in Austenitic Stainless Steel Welds

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Abstract

It is well known that the ultrasonic examination of thick austenitic stainless steel welds is difficult due to anisotropic and coarse-grained structure. The ultrasonic examination sensitivity of austenitic stainless steel welds mainly depends on many parameters like the welding process, heat input, number of welding repairs etc. This influence on the welding process and welding repairs on the examination sensitivity have been studied and analysed. The variation in heat input during welding also will have the effect on ultrasonic examination sensitivity. A study was initiated and conducted to assess the effects on the sensitivity with variation in weld heat input. A number of austenitic stainless steel weld samples with different heat inputs were prepared and subjected to examination to evaluate the effect. The paper explains in detail the study conducted and the results obtained.