

‘Welding inspection with on-line acoustic emission monitoring.’

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The online inspection and flaw detection of welds has gained significant effort over the last years due to the criticality of the welding integrity in numerous structures. A variety of non-destructive methods have been used with radiography and ultrasonic testing to be among the most popular. In this work acoustic emission technique is utilized for the online continuous monitoring of welds. The AE activity from discontinuities in the weld is stimulated by the thermal stresses in the heat affected zone (HAZ). A major advantage of applying AE is the ability of the method to provide real-time information on the weld integrity and locate defects along the weld. The sensitivity, repeatability and reliability of the method are evaluated and the results are thoroughly discussed. A comparison with other NDT methods proves the potential of AE monitoring for continuous weld inspection.

Keywords: acoustic emission, welding inspection, online monitoring