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Assessing the size of lack-of-fusion imperfections in MIG/MAG welds using Computed Tomography

Evaluarea defectelor tip lipsă de topire la sudarea MIG/MAG folosind tomografia computeruzată

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Abstract

Lack of fusion (LoF) is an imperfection typical of MIG/MAG welding. Because of its planar nature LOF is very dangerous as to the capacity of welded structures. This type of imperfection is, due to its location and orientation, difficult to detect using conventional NDT methods (ultrasound and radiography). For this reason, efforts are directed towards more sophisticated techniques such as Phased Array (PA), Time-of-flight diffraction (TOFD), and Computed Tomography (CT). The purpose of our research was to determine the shape and dimensions of LOF imperfections occurring in MIG/MAG welding processes with different shielding gases. Therefore, we resorted to the method of computed tomography, which enables us to see defects in different projections.

Keywords: LoF, MIG/MAG, imperfection, computed tomography