

STRUCTURAL INTEGRITY ASSESSMENT OF WELDS ON PRESSURE VESSELS

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Abstract

The paper presents assess the integrity of welded joints on pressure vessels made from HSLA steel. Risk based approach is applied using Failure Analysis Diagram to assess likelihood of failure. Special attention is paid on cracks defects by advanced ultrasonic testing which are unacceptable by standards, but difficult to be repaired. Structural integrity assessment was performed based on evaluation of fracture mechanics parameters, which has been used to improve safety of welded structures, focusing on welded joints on pressure vessel, as the most critical components. Simple engineering method is presented, based on the Failure Analysis Diagram (FAD) to explain evaluation of fracture mechanics parameters and their critical values in order to assess structural integrity of welded joints.

Keywords

Integrity, welded joints, pressure vessels, risk analysis.

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