

## Ultrasonic Testing of Girth Welded Joint with TOFD and Phased Array

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The article describes the fundamental physical principles of the ultrasonic defectoscopy TOFD (Time of Flight Diffraction) and Phased Array. There is a report from the ultrasonic testing of girth welded joint with ultrasonic flaw detector OmniScan MX2 16:64 PA from the company Olympus NDT. In welded joint were artificially made three defects. Two lack of sidewall fusion (on the left and right side of welded joint) and one crack in axis of welded joint. Both ultrasonic testing were designed in software ESBeamTool 5 from the company Eclipse Scientific, which simulates the geometrical ultrasonic beams spread. At the end, data from both ultrasonic testing were evaluated. The same procedure will be used for the design of ultrasonic inspection TOFD and Phased Array at girth welded joints of gas pipelines.

**Keywords:** NDT, Ultrasonic testing, TOFD, Phased Array

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