

1.11.21. AUTOMATIC ULTRASONIC TESTING OF WELD SEAMS DURING PIPELINE CONSTRUCTION

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At the beginning of m1990's, automatic argon-arc welding started to be applied during construction of pipelines. New welding technology required also the geometry of weld seam edge preparation to be modified.

However, difficulties has occurred during detection of defects like lack of fusion and penetration along the border of weld seam edges by traditional radiographic method. As a result, necessity in a new testing method has appeared.

New technology to carry out automatic ultrasonic testing (UST), so called "layer-by-layer (zonal) technology", was proposed.

For the last time, technology of automatic UST includes also TOFD method and method of through insonification. Automatic UST method possesses with the number of advantages as compared with traditional radiographic method.

Main provisions of automatic testing, location of probes, principle of manufacturing of calibration blocks, calibration and processes, as well as analysis of obtained data are described.