Ultrasonic Testing of Non-ferrous Materials in the Foundry Industry

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Article deals with ultrasonic testing of the casting. It focuses on the problems that arise when testing of castings is made of non-ferrous metals. Theoretical introduction of article is dedicated to the most common types of casting defects and selecting technology for their reliable identification. The impact of the large anisotropic grain casting to propagate and attenuation of ultrasound it describes in theory. The examples of practical testing of Cu-alloy casting are presented in experimental part. Modern tools for simulation of ultrasound propagation in testing material were used for the correct setting techniques of UT testing as well as for the evaluation of the measurement results. Conventional direct contact ultrasound probe with frequencies of 5 MHz, 3.5 MHz and 2 MHz were used for all measurements. The results of experimental measurements referred in this article are recommendations for selecting equipment and accessories for casting testing made of non-ferrous metals.

Keywords: Ultrasonic testing, castings, non-ferrous materials

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