

1.3.88. MODERN ELECTRO-MAGNETIC ACOUSTIC ULTRASONIC THICKNESS

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In this work an ultrasonic thickness which works with electro-magnetic acoustic transducer (EMAT) is presented. The ultrasonic thickness is used for estimate a stage of general corrosion in equipment in water transport, oil and gas production, power engineering.

The result of investigation of influence on layer between transducer and controlled object if there is paint, corrosion and unevenness is presented. The characteristic of propagation on ultrasonic transducer is represented by means of estimation a back scattering signal from flat bottom drilled hole. As information parameters for state of the investigated surface are used the amplitude and time of propagation of the accepted signal.

For the purpose of experimental investigation are preparing special patterns with model unevenness and unperfected which is metrology proofed. The part of investigation is carrying out on patterns with real general corrosion.

In regard to gated results are proposed methods for estimation of stage on investigated surface with corrosion as founding a stage of contact layer.

The ultrasonic thickness is developed from company “special sciences developments”, Moscow. The approbation of the ultrasonic thickness is realized of collaborator from OJSC NPO “CNIITMASH”, Moscow and Institute of Mechanic, Bulgarian Academy of Sciences – Sofia.