

QUANTITATIVE ESTIMATION OF RESIDUAL STRESSES IN QUENCHED STEEL THROUGH ULTRASONIC PARAMETERS

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After manufacturing and heat treatment processes, residual stresses are present in the specimen. Quenching is the heat treatment process that forms residual stress in metals. Two methods are used to find residual stresses in the industry, which are Destructive and Non-Destructive. This research is focused on estimating residual stresses in quenched steel using the Ultrasonic non-destructive method. Medium carbon steel is the material which is used in the research, and ultrasonic attenuation coefficients uses to correlate the variation of stresses with it. ABAQUS modelling software is used to simulate residual stresses.

Keywords: Residual Stresses, Quenched Steel, Ultrasound