

# Using Barkhausen Noise Analysis technique for evaluation of surface status of peened inner surface of pipes for car stabilizer bars

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For pipe stabilizers in automotive are used complex shaped parts of steel pipes where inner and outer surface is shot peened to guarantee fatigue properties and lifetime of stabilizers in use. The task of the paper is to approve BNA as available NDT method for testing of inner pipe surface and compare the level of peening on physical parts from production. For comparing surface and subsurface parameters of parts with and without peening XRD methods and study of depth profiles of residual stresses was used. It was checked the level of BNA signal on internal diameters after peening is circa 40% lower than on parts before peening. The approach of Sum of Effective Residual Stresses shows SERS on the level of 1 kJm<sup>-2</sup> on parts before peening such as the same parameter after peening is negative below -1.5 kJm<sup>-2</sup>. Significant differences in residual stress profiles such as in Barhkausen noise signal of peened and unpeened surfaces occurred BNA method can be used for industrial checking of peening efficiency.

