

ABSTRACT OF DOCTOR'S THESIS

Title: Analysis of the plastic forming process of high-strength bolts with non-standard shapes of heads

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Abstract

The doctoral thesis presents issues in the field of cold forging technology of high-strength bolts, with particular emphasis on the risk associated with defects due to plastic shaping. Description of the production of the most common defects from the forging process of bolts with nonstandard shapes related to surface discontinuity and grain flow pattern was done. A method was developed for analyzing the reliability of the connection and for detecting defects in the heads of high-strength bolts due to the phenomenon of hydrogen embrittlement.