Evaluation of Properties from the Cutting Surface after Applying Laser Beam Technology Using Different Scales of Cutting Speed

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This article is focused on the processing of steel materials by thermal cutting technologies - laser cutting. It analyzes the impact of technological parameters - cutting speed effect on the cutting surface quality. The goal is to define the parameters ensuring proper amount of heat absorbed into the material that does not affect the cutting surface to avoid difficulties during further processing - such as drilling, thread cutting etc. To determine the effect of cutting speed on the quality of the cutting surface, it was necessary to measure an internal stress and a hardness of HVM. Internal stresses in the experimental part of the article was measured by the X-ray diffraction and the resulting values are shown in the graphs. In the article are also shown microstructures of selected samples after the laser cutting under the different cutting parameters.

Keywords: laser cutting, heat affected zone, properties of cutting surface, hardness of cutting surface

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References