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Res. Agr. Eng.

ZDRAVECKÁ E., TKÁČOVÁ J., ONDÁČ M.

Effect of microstructure factors on abrasion resistance of high-strength steels

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Current development of high strength abrasion resistant steels is mostly oriented on high hardness, martensitic concept following the hypothesis that the abrasion resistance holds a proportional tendency with hardness. The various experimental observations have suggested that the high hardness of martenzite does not guarantee a high abrasion resistance because the brittle nature of martensite can lead to decrease their abrasive wear. The aim of this work was to analyse the influence of microstructure on abrasion resistance of selected high-strength low-alloyed steels used in the industry. The abrasive wear resistance of selected steels was obtained using an ASTM-G65 three-body abrasive wear test, microstructure and wear resistance determination. It was observed that grain refinement is an effective way of

context, micro alloyed steels offer an attractive combination of price and performance.

Keywords:

abrasive wear; working tools in agriculture; ASTM G65; mechanism of wear

[fulltext]