

Effects of Extrinsic Parameters on Friction and Wera of Alloy Steels.

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Abstract:

Parameters governing the characteristics and microstructural damages in single pass wear runs of as-received and carburized austenitic stainless steel type 304 are considered. The significance of the variation of Meyer index with load regimes is interpreted in terms of the deformation of the underlying microstructure. Stress-strain curves are examined as a function of carburization case-depth.

There is a marked load dependence of micro hardness and wear resistance at low loads traceable to the presence of chrome films. Carburization, though improves wear resistance, depletes the chromium content of 304 and makes the steel more susceptible to chemical attack, and hence corrosion.

Keywords: carburization/ friction/ wear of alloy steel

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