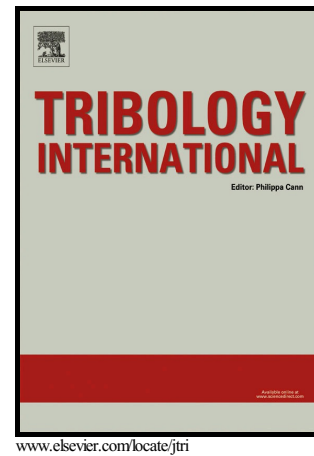


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# High temperature abrasion resistance of differently welded structural steels

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## Abstract

Structural steels provide a broad spectrum of heat, creep and wear resistance at different microstructures and hardness levels. Two different steel grades were chosen for investigation and simulated repair welds with different parameters were performed, aiming on the influence of heat input during welding and the resulting microstructure on the high temperature abrasion resistance. The impact on the wear resistance and its temperature dependence was evaluated within a high temperature three-body abrasion test and a hot hardness test rig. Results indicate a strong dependence of present microstructural phases and hardness on the wear resistance entailed by different welding parameters. Optimised parameters and low energy input during welding leads to stable hot hardness progress and wear conditions for the investigated materials.

*Keywords:* high temperature; abrasion; hot hardness; welding; tribology.

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