



## **WEAR BEHAVIOR OF TWO DIFFERENT Cr BASED ALLOYS FOR SURFACING OF STEEL PARTS**

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### **Abstract**

*In this paper is analyzed wear behavior of two different types of alloys/filler metals aimed for hard surfacing of working parts exposed to intensive abrasive wear and impact loads. The aim of the paper was to determine wear resistance of two different Cr based alloys and possibilities for extending working life of working parts. Base metal, which was surfaced, is steel from group of cheap steels, what have influence on decreasing the manufacturing costs of a new part or revitalization of a damaged one. Surfacing was done by the MMA welding method with use of preheating of the samples. Wear resistance was examined on tribometer by using block-on-disc contact, while the real working conditions were simulated, i.e. contact was realized without lubricating varying the contact speed and loads as input parameters.*

### **1. INTRODUCTION**

The objective of this paper is to point to the possibility of prescribing the surfacing technology and select the optimal filler metal for surfacing of parts exposed to intensive wear. The analyzed materials belong to a group of materials aimed primarily for surfacing of parts subjected to abrasive wear. However, in the contact zone frequently appear several wear mechanisms, out of which one could play the dominant role. This is why the objective was to establish which materials are optimal for surfacing of the heavy construction machinery, crusher plants and mills, namely the parts that are being exploited in the conditions of the direct contact with stones and rocks of various hardnesses.

The tested materials are chromium-based alloys characterized by high hardness and wear resistance. The similar materials were the research subject of some of our previous articles where results on surfacing of some other industrial plants parts were

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