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# INFLUENCE OF SINTERING TECHNIQUES ON PERFORMANCE CHARACTERISTICS OF TiC-BASED CERMETS.

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## Abstract.

This paper analyses the influence of sintering techniques (temperature, gas compression during sintering, heat treatment) on the performance characteristics. wear resistance, strength and microstructure of an advanced steel bonded TiC-based cermet, developed in TUT for metalforming application (blanking of sheet metals).

The wear tests were performed by help of a special turning (cutting) method, simulating adhesion wear – wear dominating in blanking of sheet metals.

The positive effect of gas compression (sinter/HIP) and the definitive dependence of performance on sintering parameters and heat treatment were revealed. Optimal technology ensuring maximized wear resistance and strength characteristics were specified.

Table 1. Performance characteristics – adhesive wear resistance  $L$ , transverse rupture strength  $R_{TZ}$  and hardness HV of TiC-cermet T75/14 sinterhipped at 1430°C under different argon-gas pressure

Characteristic	Gas compression, Bar			
	1	30	60	90
$L_1$ , m/mm	1600	2100	2400	2300
$R_{TZ}$ , GPa	1.8	2.2	2.5	2.4
HV, GPa	13.8	13.9	14.0	13.8

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