

Applications:

- Tribological situations (slide bearings), mechanical seals, actuators and valves for pumps handling a wide range of aggressive or abrasive media
- Parts of stop valves and armatures for oil and gas extraction industry
- Liners and grinding media for wide range of mills
- Punches, dies, thread guides and nozzles
- Nozzles for sand-blasting and hydro-abrasive cutting operations
- Rings, nozzles and guides for wire and cable production
- Inserts for cutting tools, calibration and mining equipment



Qualified personnel, strict quality control on each process stage and individual approach to each customer are your guarantee of the quality solution for your problems.

Our company has the comprehensive machinery complex that allows to manufacture ceramic and metallic parts as well as hybrid assemblies that comprise components of both these materials.

Wear-resistant products made of tungsten carbide and tungsten-free cermets **feature extremely high performance parameters:**

- erosion resistance
- chemical stability
- abrasion resistance
- resistance to vibration

that are based upon the unique combination of properties: durability, strength, high elastic modulus, high fracture toughness and excellent tribological properties.

Main physical and mechanical parameters of the material

Parameter	Tungsten-based		Tungsten-free
	W C-based	W S-based with added refractory compounds	
Density, g / cm ³	12,9 – 15,3	9,5 – 13,8	5,5 – 6,0
Hardness, H R A	79 - 91	87 - 92	87 - 92
Flexural strength, M P a, within	1200 - 2200	980 - 1700	980 – 1200
Young modulus, G P a, within	470 - 655	420 - 550	380 – 400
Fracture toughness, M P a * m ^{1/2} , within	8 - 25	10 - 20	8 – 10
Compression strength, M P a, better than	3000 - 5000	3000 - 4500	-
Thermal conductivity factor, W / m * K, within	38 - 70	17 - 25	4 – 21
Thermal expansion coefficient, 10 ⁻⁶ K ⁻¹ , within	4,1 – 6,5	5,5 – 6,6	7,5 – 9,0

