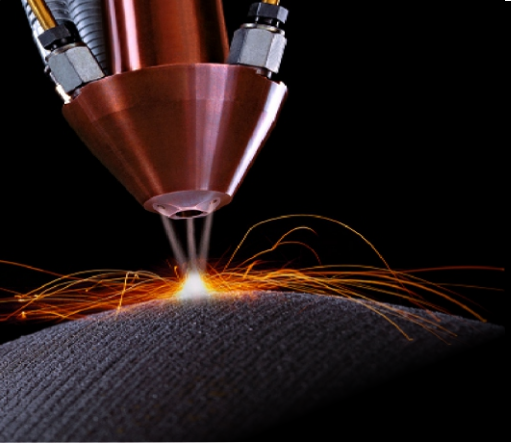

SURFACE ENGINEERING ALLOY COMPANY

SPECIALISTS IN WEAR RESISTANT PRODUCTS & SOLUTIONS

Tungsten Carbides Composites & Carboride™ Products

Tungsten Carbides particles have a hardness of 2500DPH and provide for extreme low stress (sliding) abrasion resistance, especially when blended with a tough, wear matrix of cobalt, nickel, or iron base alloy system. The matrix selection and carbide particle size are key factors in achieving optimum abrasion resistant performance in a particular application. Typically, when determining the most suitable combination, it is important to consider the following wear-mode characteristics: temperature, corrosion, particle size and impact. Two standard rules of thumb are: Utilize the cobalt or nickel base matrix in the presence of high temperature and/or corrosion, and, the finer the abrasive particulate, the finer the carbide particle requirement. Impact resistance is proportionate to the amount of matrix and the impact resistance of the matrix. Iron based products with larger carbide particles are usually best suited for applications where high stress (gouging and grinding) abrasion is prominent. Surface Engineering's carboride hardfacing products are designed to resist severe abrasion in combination with excellent corrosion resistance, adhesive wear resistance, erosion resistance and high temperature resistance up to 1100° Fahrenheit. The deposits contain up to 65% fused tungsten carbide in nickel-chrome-silicone-boron matrices ranging in hardness from HRc18 to 62 for variances in toughness and impact requirements. These self-fluxing alloys containing boron provide high bond strengths between the WC particles and the matrix eliminating wear caused by the release of the hard WC particles upon impact. Typical applications for tungsten carbide containing products are mixer blades and paddles, conveyor screws, sprockets, impellers, tamping, tools, pulverizing hammers, feed screws, pug mill knives, mill guides, crusher rolls, dozer blades, augers, scrapes blades, screens, hammer mills, ore crusher liners, slurry pumps, fans, chutes, drills bit teeth, bean and cane knives, ripper hanks, stabilizers, etc. The composites provide for ease of weld-ability and the deposits are smooth and uniform. Our carboride products may be applied by GTAE, SMAW, PTA, oxy-acetylene, spray and fuse, manual torch. Our most popular composition of 40% nickel-chrome-boron 60% tungsten carbide is even available in the form of MIG wire. SEACO carboride product compositions are designated by five (5) digit numbers, whereas the first two digits indicate the percentage of matrix, the second two indicates the percent of WC, and the last digit indicates the matrix hardness. Contact our customer or technical service department for more information.

Composites	Compositions	Product Availability						
Base%/WC%/HRC	Matrix Type/Carbide Content & Type	Rod	Elect.	Wire	M/T*	S/F*	PTA	Laser
40604	NiCrB* 40Rc 60% Cast/Sintered/Macro	x	x	x	x	x	x	x
50506	NiCrB* 60Rc 50% Cast/Sintered/Macro	x	x		x	x	x	x
65354	NiCrB* 40Rc 35% Cast/Sintered/Macro	x	x		x	x	x	x
70306	NiCrB* 60Rc 30% Cast/Sintered/Macro	x	x		x	x	x	x
85154	NiCrB* 40Rc 15% Cast/Sintered/Macro	x	x		x	x	x	x
40603	NiSiB* 30Rc 60% Cast/Sintered/Macro	x	x		x	x	x	x
35655	NiCrB* 50Rc 65% Cast/Sintered/Macro	x	x		x	x	x	x
25756	NiCrB* 60Rc 75% Cast/Sintered/Macro	x	x		x	x		
60404	NiCrB* 40Rc 40% Cast/Sintered/Macro	x	x	x	x	x	x	x
	*Matrix' of various Rc available: Rc 30-62	1/8 - 1/4"	1/8 - 1/4"	0.62"-7/64"	Manual Torch	Spray Fuse	Plasma Transfer Arc	Laser

***Other sizes available upon request.**

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