PROTECTIVE METAL ALLOYS

TECHNICAL DATA SHEET

Diamond Carbide 40 V Grade - Nickel Based Alloy

Blended Carbide Composite Hardfacing Rod

Hard Surfacing Maintenance and Repair

Maximum Resistance to Moderate Impact and Extreme Abrasion

DC40 V Grade rod is a special blend of tungsten carbide sintered with nickel, chromium, and boron alloy powder. Nickel, chromium, boron alloy offers excellent corrosion, abrasive wear, and high temperature oxidation resistance. SWC anti-wear and cutting characteristics significantly increase part life and assist in the cutting and shredding action. Reviews of microstructure show dense, undissolved, sintered carbide embedded in a nickel, chromium and boron matrix.

The low melting point (2000˚F) of nickel, chromium, boron matrix enables overlays to be applied with minimal dilution and base metal distortion. This rod is self-fluxing and easily applied by OAW (Oxyacetylene) and GTAW (TIG) on clean base metals.

It can be applied to most base metals: steels, stainless steels, carbon steels and others.

Unique sintered powder metallurgy process allows for manufacture of diameter rods from 5/16" (.3125") down to 1/8" (.0625") diameter.

Applications

Drill bits, mining tools, stabilizers, stainless type augers and any application that requires resistance to extreme metal wear and moderate impact resistance.

Matrix	Rockwell "C" Scale	Nominal Chemistry		Melting Temperature
VERSAlloy® 40 AWS A5.13 NiCr-A	38-42	C 0.45 Cr 11.00 Si 2.25	B 2.50 Fe 2.25 Ni Bal	2000°F

Welding Techniques and Procedures

In all cases, minimum dilution processes are recommended to obtain maximum wear resistance. The surface to be hard-faced should be clean of grease, oil, rust and other contaminants by grinding the base metal.

OAW (Oxyacetylene) – Use a neutral flame (2 to 3 x "feather"), preheat base metal and bring to a "red" heat at the starting point of your weld, rods will then flow freely when introduced into the torch flame.

GTAW (TIG) - Use DC electrode negative (straight polarity) with largest tungsten electrode possible to minimum tungsten contamination of the weld puddle.

SMAW (Coated Electrodes) - Can be run either AC or DC reverse polarity.

Call Rankin PMA at (800) 854-2159 for more information.

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