



TECHNICAL DATA SHEET

Diamond Carbide 40 Grade - Nickel Based Alloy

Blended Carbide Composite Hardfacing Rod

Hard Surfacing Maintenance and Repair

Maximum Resistance to High Impact and Severe Abrasion

DC40 Grade hardfacing rods are a special blend of nickel, chromium, boron alloy matrix, and finely powdered tungsten carbide. Nickel, chromium, boron alloy offers excellent resistance to the effects of corrosion, erosion, high temp oxidation, abrasion and grinding wear. The addition of WC toughens the matrix, bringing its resistance wear to excellent, for severe abrasion conditions with high impact requirements. Reviews of microstructures exhibit dense deposits of undissolved tungsten carbides embedded in a high strength matrix.

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

Alloy can be applied to most base metals, cast irons, steels, stainless steels, nickel and cobalt alloys and others, thereby eliminating a confusing selection process.

Unique sintered powder metallurgy process allows for manufacture of diameter rods from 7/16" (.4375") down to 1/16" (.0625") diameter.

Applications

Pulp chippers, debarkers, mill hammers and any application that requires resistance to severe metal wear and high impact resistance.

Matrix	Rockwell "C" Scale	Nominal Chemistry		Melting Temperature
VERSAAlloy® 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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