



PRODUCT DATA SHEET

Weartech 60 (WT-60) Bare Rod, Mig Wire, & PTA Powder

Description: Weartech 60 is a nickel chrome silicon boron alloy that forms complex borides and carbides in a nickel matrix. It flows easily on to base metals and yields smooth deposits, It can be formed and wiped to sharp edge. Deposits maintain a level of hardness up to 1200 F and resist galling, pitting and corrosion in addition to abrasion. It can be deposited on low and medium carbon steels, and cast iron (with flux). Deposits have exceptional hot hardness capabilities.

Applications:

- Liners
- Thrust Shoes
- Bushings
- Plastic Extrusion Flight Screws
- Cages
- Valve Components
- Oil Extrusion Screws
- Slurry Pipe and Elbows
- Glass Molds
- Centrifuges
- Shaft Sleeves
- Impeller Screws

Forms, Sizes and Packaging Specifications: See Packaging Data Sheet

Weld Parameters									
Diameter (Mesh)	(80/270)	.045" Short	.045" Spray	0.062"	1/8"	5/32"	3/16"	1/4"	5/16"
	(100/325)	1.2mm	1.2mm	1.6mm	3.2mm	4.0mm	5.0mm	6.4mm	8.0mm
Welding Process	PTAW (PTA)	GMA, MIG	GMA, MIG	GMA, MIG	GTAW, TIG	GTAW, TIG	GTAW, TIG	GTAW, TIG	
Current	DCEN	DCEP	DCEP	DCEP	DCEN	DCEN	DCEN	DCEN	
Amperage	100-160	175-195	160-200	200-240	90-120	120-140	140-160	160-180	
Voltage	15-30	21-23	24-26	24-26	20-40	20-40	20-40	20-40	
Shielding Gas	100% Ar***	75Ar-25Co	100% Ar	100% Ar	100% Ar	100% Ar	100% Ar	100% Ar	
Tip Size (OFW) (Position)			Flat	Flat	4	4	5	6	6
Flame (OFW) (Stickout)			1/2"-5/8"	5/8"-3/4"	1X	1X	1X	1X	1X

(GTAW) - Gas Tungsten Arc Welding {TIG}, GMA - Gas Metal Arc {MIG} Recommended Flow Rate of Argon: 25-40 cfh

(OFW) - Oxyacetylene Fuel Welding {OXY}

(PTAW) - Plasma Transfer Arc Welding [***Argon Gas Flow Rates - Center 1.5-3.5 LPM, Powder 0.5-1.5 LPM, Shielding 10-15 LPM]

Typical Chemistry (wt%)							
C	B	Si	Cr	Fe	Co	Ni	TOE
0.75	3.5	4.5	14	4	1	Bal	0.5

Deposit Characteristics	
Abrasion Resistance	Excellent
Impact Resistance	Fair
Corrosion Resistance	Good
Hot Hardness	Excellent, Up to 1200 °F
Friction Resistance	Good
Hardness	HRc 54-62
Deposit Layers	2 Maximum
Surface Cross Checks	Yes
Machinability	Grind, Machining not recommended
Magnetic	No
Specifications	AWS/SFA A5.21:2001 ERNiCr-C AWS A5.33 CW-NiCr-SiB, UNS N99646 UNS W89636, MIL-17131 Type R-NiCr-C

Typical Physical and Mechanical Properties					
Density		Liquidus		Specific Heat	Thermal Expansion µin/in °F
g/cc	lb/in ³	°C	°F	BTU/lb °F	
7.8	0.28	1038	1900	0.1	8.1
Tensile Strength ksi, As Cast		Yield Strength ksi, As Cast		Elongation %, RT	Impact Strength RT, ft/lb
77				<1%	