



Quality Management System
in accordance with
ISO 9001:2000
Cert # 05-R0925

SILICON BRONZE Welding Wire and Rod



American Welding Society
Sustaining Company Member

ALLOY DESCRIPTION AND APPLICATION;

Washington Alloy Silicon Bronze is a copper based filler metal containing about 3% silicon and may have small percentages of manganese, tin, and zinc. Silicon bronze is typically used for gas-tungsten arc welding and gas-metal arc welding of copper, brass, bronze, steel, galvanized steels and also cast iron. When working with silicon bronze base metal keep the interpass temperature below 150° F to minimize hot cracking. Base metals of cast iron may need a preheat of 600° F while copper may need a 400-800° F. The use of a small narrow weld puddle will reduce the contraction stresses and give you a faster cooling during the hot-short temperature range. May also be known as Everdur.

TYPICAL GMAW WELDING PROCEDURES; DCEP Spray transfer

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Argon (cfh)
0.023	460-580	60-120	21-22	20-25
0.030	450-525	130-160	21-24	20-30
0.035	385-455	155-190	23-25	25-30
0.045	275-310	210-235	26-28	30-35
1/16	150-240	250-310	27-31	35-40

TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	80-170	12	3/8-1/2"	20	1/16-1/8"
3/32"	3/32"	140-275	12	3/8-1/2"	20	1/8- 3/16"
1/8"	1/8"	200-375	12	1/2"	25	1/4-3/8"
1/8-5/32"	3/16"	260-475	12	1/2-3/4"	30	3/8-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

CHEMICAL COMPOSITION REQUIREMENT (%) AND PHYSICAL PROPERTIES;

Zinc	1.00	Solidus	1780° F
Manganese	1.50	Liquidus	1880° F
Silicon	2.8-4.0	Electrical Conductivity	7.0% (% of IACS) annealed
Iron	0.50	Density (lbs/in ³)	0.308
Aluminum	0.01	Thermal Conductivity	21 Btu
Lead	0.02	Elongation	65 %
Tin	1.00	Tensile Strength (psi)	50,000
Copper	Remainder	Brinell Hardness	80-100

All single values on composition are maximum percentages & Total others elements 0.50

AVAILABLE SIZES: TCU SB = Spools of .023, .030, .035, .040, .045, 1/16

TCU SB Cut lengths of .030, .035, .045, 1/16, 5/64, 3/32, 1/8, 5/32, 3/16, 1/4

Other sizes available – please inquire

SPECIFICATIONS; ANSI/AWS A5.7 ERCuSi-A
ASME SFA 5.7 ERCuSi-A



5-2006 DC

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