



SILICON BRONZE Welding Wire and Rod

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
www.weldingwire.com

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



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 REQUIRMENT (%) AND PHYICAL 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, ¼

Other sizes available – please inquire

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

EAST COAST
7010-G Reames Rd
Charlotte, NC 28216
Tel (888) 522-8296
Fax (704)598-6673

WEST COAST
8535 Utica Ave
Rancho Cucamonga, CA 91730
Tel(800)830-9033
Fax (909)291-4586



5-2006 DC

Washington Alloy Company believes that all information and data given is correct. Use this information to assist in making your own evaluations or decisions and this information should not be mistaken as an expressed or implied warranty. U.S. ALLOY CO. assumes no liability for results or damages incurred from the use of any information contained herein, in whole or in part .