SILICON BRONZE ALLOY NO 656

DESCRIPTION: Weldcote Metals Silicon Bronze is a copper based filler metal containing 3% silicon and small amounts of manganese, tin and zinc. Primarily used for MIG, TIG and oxyacetylene welding of copper, copper-silicon and copper-zinc base metals to themselves and to steel. Excellent for plain or galvanized steel sheet metal as well as other coated steels. Weldcote Metals Silicon Bronze is also used for surfacing areas subjected to corrosion. The oxyacetylene gas flame should be slightly oxidizing. Keep the weld puddle small in order to promote fast solidification and minimize cracking. A high boric acid flux should be used both before and during welding. Preheating is NOT recommended.

SPECIFICATIONS: ANSI/AWS A 5.7 ASME SFA-5.7 ERCuSi-A

NOMINAL COMPOSITION:

Manganese	1.5 % max.	Tin	1.0 % max.
Lead	0.02 % max.	Zinc	1.0 % max.
Copper	Remainder	Iron	0.50% max
Silicon	2.8-4.0%	Aluminum	0.01 % max.
Others	0.50 % max.		

PHYSICAL PROPERTIES:

Solidus	1780° f (971° C)	Liquidus	1880° f (1027°C)
Tensile Strength	50,000 psi min.	Brinell Hardness	80-100 HB
			(500 kg load)

RECOMMENDED WELDING PARAMETERS:

*GMAW (MIG) Parameters (DC Reverse Polarity) Electrode Positive Spray transfer

Wire Diameter	Amps	Volts	Argon (cfh)	Wire Feed ipm
.030	130-150	21-23	25	460-500
.035	145-185	23-25	30	400-440
.045	195-215	26-28	30	280-310
1/16	260-280	27-30	40	150-210

*GTAW (Tig) Parameters (DCSP) [2] Electrode negative or ACHF

Material	2%Thoriated [2]	Filler Wire Size	Amps (DC)	Amps (AC)	Gas Cup	Argon(cfh)
1/16"	1/16"	1/16"	70-150	70-150	3/8-1/2	15
3/32"-1/8"	3/32"	3/32"	150-200	140-230	7/16-1/2	15
3/16"- 1/2"	1/8"	3/32"-1/8"	230-400	225-320	7/16-1/2	20
1/2"-1"	3/16"	3/16"-1/4"	325-500	290-485	1/2	25

*All parameters are suggested as basic guidelines and will vary depending on joint design, number of passes and other factors.

Weldcote Metals believes this data to be accurate and to reflect qualified expert opinion regarding current research. However, Weldcote Metals can not make any expressed or implied warranty as to this information.