

Inweld Silicon Bronze

Alloy 656 UNS/CDA C65600
 AWS A5.7 ERCuSi-A, AWS A5.27 RCuSi-A
 ASME SFA5.7 ASME SFA 5.27 ERCuSi-A
 MIL-E23765/3 (MIL-CuSi)



Description and Applications:

Inweld Silicon Bronze, years ago referred to as “Everdur” 656, contains 3% silicon and residual amounts of manganese, tin and zinc. The high silicon content allows this alloy to be used in welding and brazing procedures. Silicon Bronze is best known for welding plain or galvanized steel sheet metal. Principal applications include MIG, TIG or oxyacetylene welding of copper, copper-silicon and copper-zinc base metals to themselves and to steel. Silicon Bronze is also used for surfacing parts that may be exposed to a corrosive environment. The weld deposits of this alloy demonstrate high strength, excellent corrosion resistance and good weld ability.

Apply a high boric acid flux before and during welding. When oxyacetylene welding, the gas flame should be slightly oxidizing. Keep a small weld pool that promotes rapid solidification and this will also minimize cracking.

Chemical Composition of Silicon Bronze ERCuSi-A

Cu	Zn	Fe	Si	Al	Pb	Mn	Sn	Total Other(s)
Balance	1.0	0.50	2.8-4.0	0.01	0.02	1.5	1.0	0.50

Single values are maximum unless otherwise specified.

Approximate Melting Temperature: 1866 F (1019 C)

Average As-Welded Brinell Hardness: 80-100

Tensile Strength: 50,000 psi (345 MPA)



Recommended Welding Parameters:

	Wire Diameter	Voltage*	Amperage*
GMAW (DCRP – Electrode +)	0.035”	20-26	100-200
100% Argon or a 75 – 25%	0.045”	22-28	100-250
Argon / Helium mixture	1/16”	29-32	250-400
.	3/32”	32-34	350-500
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GTAW (DCSP – Electrode -)	1/16”	70-120	70-150
ACHF using 100% Ar or He	3/32”	120-160	140-230
2% Thoriated, 2% Ceriated or	1/8”	170-230	225-320
2% Lanthanum Tungsten Electrode	5/32”	220-280	175-300
.	3/16”	280-330	200-320

*Use low range for iron or nickel-based alloy’s, middle range for bronze alloys and high range for copper.

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* Inweld specs all there product to AWS standards.*