

Technical Data Sheet **SIL-TRODE®**

Description and Application

A silicon bronze welding alloy (UNS C65600) for the inert gas welding of copper-silicon, copper zinc, copper to themselves, and also to mild steel. Used extensively in the welding of galvanized steel. The silicon content of 2.8 - 4%, increases tensile strength, hardness, and work hardening rates. Silicon bronze also provides good corrosion resistance and has good weldability.

Silicon bronze is hot short and extreme care must be exercised to avoid overheating the joint which tends to cause cracking.

Chemistry

% (Filler Metal)

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

Mechanical Properties (nominal)

Tensile Strength, ksi	50(350 MPa)
Elongation, % in 2"	40
BHN (500kg.)	
1/4" deposit	80

**Hardness will vary depending on quality of the weld and experience and knowhow of the welder.*

Welding Procedure

With gas metal-arc welding, the weld metal should be deposited in stringer beads, maintaining a small molten pool to avoid overheating the hot short silicon bronze base metal. Use argon gas for shielding and relatively high welding travel speeds.

With the gas-tungsten arc welding process, welding is accomplished with DCEN (direct current electrode negative) current and argon or helium gas shielding. ACHF (alternating current high-frequency) with argon gas shielding may be used to take advantage of the arc cleaning action.

Preheat

Preheat slightly to remove moisture. Interpass temperature should not exceed 150°F (66°C).

Specification

AWS A5.7 Class ER CuSi-A

