

Inweld Nickel Bronze

Alloy 680 UNS/CDA C68000
 AWS A5.27 Class RBCuZn-B
 ASME SFA5.7 Class RBCuZn-B
 QQ-R-571C, MIL-R-19631B
 Type RCuZn-B



Description and Applications:

Inweld Nickel Bronze is commonly referred to as Manganese Bronze. This alloy is similar to Naval Bronze however iron, manganese and nickel have been added to the analysis. The iron, nickel and manganese produce weld deposits with increased hardness and strength. Nickel also ensures uniform distribution of iron in the deposit. Inweld Nickel Bronze is primarily used in brazing applications or with the oxyfuel gas welding (oxyacetylene) process on steel, cast iron, brass and bronze in small, non-critical applications including repair welding. TIG welding can be done but in most cases Nickel Bronze is not used with this process. Parameters for the TIG process are given below. Inweld Nickel Bronze is also used for building-up wearing surfaces and bearings. Use a boric acid or borax commercial flux before and during welding. A neutral to slightly oxidizing flame should be used. Preheating may be necessary for some applications.

Chemical Composition of Nickel Bronze RBCuZn-B

Cu	Zn	Fe	Si	Al	Pb	Mn	Ni	Sn	Total Others
56.0-60.0	Balance	0.25-1.20	0.04-0.15	0.01	0.05	0.01-0.50	0.20-0.80	0.80-1.10	0.50

Single values are maximum unless otherwise specified.

Approximate Melting Temperature: 1620 F (882 C)
 Average As-Welded Brinell Hardness: 80-110
 Tensile Strength: 56,000 psi (386 MPA)



Recommended Welding Parameters: Inweld Nickel Bronze is not available in spool form, therefore GMAW is not applicable.

	Wire Diameter	Voltage*	Amperage*
GMAW (DCRP – Electrode +)	“		
100% Argon or a 75 – 25%	“		
Argon / Helium mixture	“		
.	“		
.			
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.