Inweld Deox Copper

Alloy 189 UNS/CDA C18980
AWS A5.7 Class ERCu, AWS A5.27 RCu
ASME SFA5.7, ASME SFA5.27 ERCu
QQ-R-571C, MIL-R-19631B Type MIL-RCu-2
MIL-C-19654 (MIL-RCu-2)

Inweld® Welding Alloys & Supplies

Description and Applications:

Inweld Deox Copper is a 98% copper filler metal used to overlap, build-up and fabricate electrolytic tough pitch and oxygen-free copper. The remaining 2% of this alloy is made up of residual elements including phosphorus and silicon which act as deoxidizing agents to promote sound weld joints. Inweld Deox Copper is chosen over other copper based alloys in situations where the best combination of electrical conductivity, mechanical properties and corrosion resistance is required. This filler metal can be used to MIG, TIG and Oxyacetylene weld copper, copper-alloyed base metals, copper to mild steel, for overlaying steel and for the fabrication of copper pipes, tanks and fittings. Inweld Deox Copper flows easily and the weld deposits are porosity free and match the color of copper.

Apply boric acid flux before and during welding. Preheat heavier, thicker sections, but do not overheat as this will degrade weld properties. This alloy has a very high thermal conductivity rate so overheating will occur much faster than other base metals. The oxyacetylene flame must be neutral to slightly oxidizing. The oxyacetylene torch tip size must be one to two sizes larger than the base plate.

Chemical Composition of Deox Copper ERCu

Cu	Si	Al	Pb	Mn	P	Sn	Total Others
Balance	0.50	0.01	0.02	0.50	0.15	1.0	0.50

Single values are maximum unless otherwise specified.

Approximate Melting Temperature: 1967 F (1075 C)
Average As-Welded Brinell Hardness: Rockwell F25
Tensile Strength: 25,000 psi (172 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.