



Deoxidized Copper Alloy No. 189



Description: Weldcote Metals DEOX Copper is a 98% copper filler metal used for MIG, TIG and oxyacetylene welding of copper and copper-alloyed base metals. DEOX copper contains small amounts of phosphorus and silicon which act as the deoxidizing agents to promote sound weld joints. Weldcote Metals DEOX Copper is easy flowing and produces weld deposits that are porosity free, electrically conductive and the color will match that of copper. Excellent for joining copper to mild steel, for overlaying steel and for the fabrication of copper pipes, tanks and copper fittings. The oxyacetylene gas flame must be neutral or slightly oxidizing. Tip size must be one to two sizes larger than the base plate. Preheating should be done only if the part is thick. A boric acid or borax flux is recommended.

Specifications: AWS A5.7, Class ERCu, AWS A5.27 Rcu, ASME SFA5.7, ASME SFA5.27 ERCu

NOMINAL COMPOSITION:

Manganese	.50 % max.	Tin	1.0 % max.
Lead	.02 % max.	Phosphorus	.15 % max.
Copper	98.0 % min.	Silicon	.50 % max.
Aluminum	.01 % max.	Others	.50 % max.

PHYSICAL PROPERTIES:

Melting Point	1967° f (1075° C)	Reduction of area	45 %
Yield Strength	8,000 psi	Tensile Strength	29,000 psi
Elongation	29 %	Electrical Conductivity (%IACS)	40%
Brinell Hardness	54 HB (500 kg load)		

RECOMMENDED WELDING PARAMETERS:

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

<u>Wire Diameter</u>	<u>Amps</u>	<u>Volts</u>	<u>Argon (cfh)</u>	<u>Wire Feed ipm</u>
.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

<u>Material</u>	<u>2%Thoriated ²</u>	<u>Filler Wire Size</u>	<u>Amps (DC)</u>	<u>Amps (AC)</u>	<u>Gas Cup</u>	<u>Argon(cfh)</u>
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.**