Metelec™

Data Sheet
OF COPPER - C103/CW008A

C103/CW008A is a commercially pure oxygen free copper manufactured by re-melting and pouring in a protective gas atmosphere. The C103 has a minimum copper content of 99.95% and offers an electrical conductivity of greater than 100% IACS (the highest available from commercially pure copper) enabling it's use in electronic applications.

Apart from the increase in thermal and electrical conductivity, the other benefit in the removal of oxygen is that C103 is not susceptible to hydrogen embrittlement when heated in a reducing atmosphere. This enables the Cu-OF alloy to be welded using gas shielded arc, butt and oxy-acetylene methods

Key Features:
Excellent conductivity values
Freedom from hydrogen embrittlement
Excellent formality
Excellent joining characteristics

Related Specifications:	
C103	BS EN 13601 : CW008A
C10200	Cu-OF
2.0040	BS1433

Chemical Composition:	
Copper	99.95% min (incl. Ag)
Lead	0.005% max
Bismuth	0.0010% max
Total Imps	0.03% max (excl. 0_2 & Ag)

Typical Uses:

Traditional uses for C103 copper include vacuum engineering, electronics, anodes, electrical instruments, rotor conductors for large generators and motors, flexible cables, cords, leads and electrical equipment at elevated temperatures in the presence of reducing gases, switch-gears and switching devices.

Typical Physical Properties:	
Melting point	1083°C
Density	8.94 g/cm³
Specific heat	385 J/Kg °K
Thermal conductivity (RT)	393 W/m°C
Thermal expansion coefficient (20 - 200°C)	17.3 x 10 - 6
Electrical conductivity	100 - 101.5% IACS
Electrical resistivity	0.01724 ohm mm2/m
Fabrication Properties:	
Hot working temperature range	750 - 950°C
Hot formability	Good
Cold formability	Excellent
Cold reduction between anneals	95% max
Machinability rating (free cutting brass=100)	20%
Annealing temp. Range	200 - 650°C
Stress relieving temp. Range	150 - 200°C
Joining Methods:	
Soldering	Excellent
Brazing	Excellent
Oxy-acetylene welding	Fair
Gas-shielded arc welding	Good
Resistance welding : Spot and seam butt	Not recommended - Good

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