AZIENDA METALLI LAMINATI s.p.a.

Cu – OF

TECHNICAL DATA SHEET - EDITION 2022

INTERNATIONAL STANDARDS

EN	DIN	ASTM	JIS
CW008A	Cu-OF	C10200	C1020

CHARACTERISTICS

Cu-OF is an oxygen-free, high conductivity copper. The high purity and absence of deoxidizers accounts for 100% IACS electrical conductivity as well as no susceptibility to hydrogen embrittlement. Cu-OF has a very good formability and can be brazed and welded. The main field of application are Brazed Plate Heat Exchangers and very critical electrical and electronic components.

MATERIAL TEMPER

Soft annealed	Half Hard	Hard	Hard as Rolled
R220 / H040	R240 / H065	R290 / H090	R360 / H110

DIMENSIONS

Thickness range	0.04 to 0.30 mm
Width range	10 to 540 mm
Inner and outer diameters	Acc. to customer requirements

TYPICAL APPLICATIONS

Brazed Plate Heat Exchangers, Fin-type Heat Exchangers, electrical and electronic components, conductors, contacts and terminals, printed circuits and many others.

CHEMICAL COMPOSITION CU-OF

CHEMICAL COMPOSITION

Cu Min. 99.95%	Bi Max. 0.0005%	Pb Max. 0.005%	O Max. 0.001%
Cu-OF is in accordance with RoHS 2002/96/CE for electric and electronic components and with 2002/53/CE for the automotive industry			

PHYSICAL PROPERTIES

Melting point 1083 degrees C	Density 8,940 kg/m3	Specific heat capacity cp 0.394 kJ/kgK	Young's modulus 127 GPa
Thermal conductivity 394 W/mK		Coefficient of thermal expansion α 17.7 10-6/K	

CORROSION RESISTANCE

Copper is resistant to natural and industrial atmospheres as well as maritime air, drinking and service water, non-oxidizing acids, alkaline solutions and neutral salt solutions.
Copper is not resistant to ammonia, halogenide, cyanide and hydrogen sulfide solutions and atmospheres, oxidizing acids and sea water (especially at high flow rates).

MECHANICAL PROPERTIES

Temper	Thickness	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation	HV
R220	0.04 – 0.10	200 - 250	≤ 100	≥ 20 %	40 - 65
R220	0.101 to 0.25	210 - 260	≤ 120	≥ 33 %	40 - 65
R220	≥ 0.25	210 - 280	≤ 140	≥ 38 %	40 - 70
R360		≥ 360	≥ 320	≥ 2 %	≥ 110

ELECTRICAL PROPERTIES

Temper	Resistivity	Conductivity	Conductivity IACS
R220 (soft)	Max. 0.01724 Ω mm2/m	≥ 58 MS/m	≥ 100%

FABRICATION PROPERTIES

Cold formability	Excellent
Hot formability	Excellent
Soldering	Excellent
Brazing	Excellent
Oxyacetylene welding	Suitable
Gas shielded arc welding	Good
Resistance welding	Less suitable
Machinability	Less suitable