

C12000

Cu-DLP

Alloy Designation

EN	Cu-DLP
DIN CEN/TS 13388	CW023A
UNS	C12000

Characteristics

Cu-DLP is a phosphorus-deoxidized copper with a limited, medium amount of residual Phosphorus. It has a good electrical conductivity and excellent welding and soldering properties. It can be formed excellent, either hot or cold.

Chemical Composition (Balance)

Weight percentage

Cu	≥ 99.90	%
P	0.005 - 0.012	%

Main Applications

Electrical: Cable Strip, Busbars (Welded or Brazed), Tubular Bus, Leadframes for power semiconductors.

Industrial: Tubing, LP Gas Service, Conductors, Resistance Welding Equipment, Welded Tube, Medical Gas-Oxygen.

Other: Applications Requiring Welding or Brazing, Apparatus industry.

Mechanical Properties (EN 1652)

Temper	Tensile Strength	Yield Strength Minimum	Elongation Minimum	Hardness	Bending 90°	
	Rm	Rp _{0.2}	A _{50mm}	HV *	gw rel. Bending Radius R/T	bw
	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
R220	220 .. 260	≤ 140 *	33	40 .. 65	0	0
R240	240 .. 300	180	8	65 .. 95	0	0
R290	290 .. 360	250	4	90 .. 110	0	0
R360	≥ 360	320	2	≥ 110	0	0.5

* only for information

Physical Properties

Typical values in annealed temper at 20 °C

Density		8.94	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	17.3	10 ⁻⁶ /K
Specific heat capacity		0.386	J/(g·K)
Thermal conductivity		375	W/(m·K)
Electrical conductivity	MS/m	55	MS/m
Electrical conductivity	IACS	95	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	3.6	10 ⁻³ /K
Modulus of elasticity	GPa	130	GPa

Fabrication Properties *

Cold Forming Properties	Excellent
Machinability (Rating 20)	Less suitable
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Less suitable
Gas Shielded Arc Welding	Excellent
Laser Welding	Fair

* For more details call our technical service