CuETP

CuETP | C11000

Cu-ETP is electrolytically purified, oxygen-containing copper. It has excellent electrical conductivity and is economically attractive compared to other high-conductivity copper alloys. Due to its residual oxygen content, it is susceptible to hydrogen embrittlement and is therefore unsuitable for welding. Its applications include architectural and electrical components.

Comparable Standarts

EN	JIS	UNS
CW004A	C 1100	C11000

Chemical Composition %

Cu	Pb	Bi [%]	O [%]
min 99.90	max 0.005	max 0.0005	max 0.04

Physical Properties

Melting Point	1083	[°C]
Density	8.9	(g/cm³)
Cp @ 20°C	0.394	[kJ/kgK]
Thermal Conductivity	390	(W/mK)
Electrical Conductivity	≥100	%
Modules of Elasticity	127	[GPa]
α @ 20°C	17.7	[10-6/K]

Note: The specified conductivity applies to the soft condition only.

Cp specific heat

α thermal expansion coefficent

Fabrication Properties

Cold Formability	mükemmel
Hot Formability	mükemmel
Soldering ability	mükemmel
Oxyacetylene welding	tavsiye edilmez
Gas shield arc welding	orta
Resistance welding	tavsiye edilmez
Machining	tavsiye edilmez
Welding	iyi

Electrical Conductivity

Electrical conductivity depends on chemical composition, degree of cold deformation, and grain size. Higher levels of deformation and smaller grain sizes reduce conductivity.

Typcial Uses

Architectural metalwork, gutters, siding, roofing, downpipes, automotive and industrial radiators, electrical conductors, contacts, terminals, chemical process equipment, kitchen and various household appliances, etc.

Corrosion Resistance

Copper is resistant to natural and industrial atmospheres, as well as sea air, drinking and utility water, non-oxidizing acids, alkaline solutions, and neutral salt solutions.
Copper exhibits poor corrosion resistance in ammonia, halogen, cyanide, and hydrogen sulfide solutions and atmospheres, oxidizing acids, and seawater (especially at high flow rates).
Due to its oxygen content, Cu-ETP is not resistant to hydrogen embrittlement in reducing atmospheres at high temperatures.

Mechanical Properties

	Tensile Strength [MPa]	Yield Strangth [MPa]	Elongation A50 [%]	Hardness HV [-]	Bend ratio 180° [r]	
					HY	HYT
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	0.5
R360	≥ 360	≥ 320	≥ 2	≥ 110	1	2

Other tempers are available upon request.

r = x * t (thickness t ≤ 0.5mm)

GW bend axis transverse to rolling direction. BW bend axis parallel to rolling direction.

Dimensional Specifications

Thickness (mm)	Width (mm)
0.04-0.20	10-400
0.21-0.50	5-400
0.51-1.00	5-600
1.01-4.00	15-600
4.01-7.00	25-600

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