

# Cu - ETP

## TECHNICAL DATA SHEET - EDITION 2022

### INTERNATIONAL STANDARDS

EN CW004A	DIN E-Cu58	ASTM C11000	JIS C1100
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### CHARACTERISTICS

Cu-ETP is an oxygen containing copper which has a very high electrical and thermal conductivity. It has excellent forming properties. Due to its oxygen content soldering and welding properties are limited.

### MATERIAL TEMPER

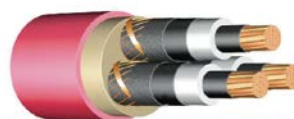
Soft annealed R220 / H040	Half Hard R240 / H065	Hard R290 / H090	Hard as Rolled R360 / H110
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### DIMENSIONS

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

### TYPICAL APPLICATIONS

Electromagnetic shielding of medium and high voltage cables, automotive and industrial radiators, electrical conductors, contacts, terminals and many others.



## CHEMICAL COMPOSITION CU-ETP

### CHEMICAL COMPOSITION

Cu Min. 99.90%	Bi Max. 0.0005%	Pb Max. 0.005%	O Max. 0.040%
Cu-ETP 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 8,900 kg/m <sup>3</sup>	Specific heat capacity cp 0.394 kJ/kgK	Young's modulus 127 GPa
Thermal conductivity 390 W/mK		Coefficient of thermal expansion α 17.7 10 <sup>-6</sup> /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).

Due to the oxygen content Cu-ETP is not resistant to hydrogen embrittlement in reducing atmospheres at elevated temperatures.

### 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 mm <sup>2</sup> /m	≥ 58 MS/m	≥ 100%

### FABRICATION PROPERTIES

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

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