

SM1100

Cu-ETP

Alloy 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. Main application:

Automotive - Radiators, Connectors

Electrical - Transformer Strips, Switches, Terminals, Contacts, Connectors, Busbars, Terminal Connectors, Conductors, Cable Strips

Industrial - Printed circuit boards, Stamped parts, Pressure Vessels, Chemical Process Equipment, Heat Exchangers, Heat sinks, Printing Rolls, Anodes, Rotating Bands, Kettles, Pans, Vats

Mechanical properties	Temper condition				
	R200	R220	R240	R290	R360
Tensile strength in N/mm ² ref only	200-250	220-260	240-300	290-360	≥ 360
0,2% yield strength in N/mm ²	≤ 100	< 140	≥ 180	≥ 250	≥ 320
Vickers hardness HV	40-65	40-65	65-95	90-110	≥ 110
Elongation A _{L50%}	min 42	min. 33	min. 8	min. 4	min. 2
Physical properties (Typical values in annealed temper at 20 °C)					
Thermal expansion coefficient -191 ... 16°C 0 ...300°C	14.1		10 ⁻⁶ /K		
	17.7		10 ⁻⁶ /K		
Specific heat capacity	0.386		J/(g·K)		
Density	8.93		g/cm ³		
Thermal conductivity	394		W/(m·K)		
Thermal coefficient of electrical resistance (0 ... 200°C)	3.7		10 ⁻³ /K		
Modulus of elasticity (1 GPa = 1 kN/mm ²) cold formed annealed	130		GPa		
	110		GPa		
Electrical conductivity (1 MS/m = 1 m/(Ω mm ²))	≥ 58		MS/m		
Electrical conductivity (IACS)	100		%		

Material designation

EN	Cu-ETP (E-Cu, E-Cu58)
UNS	C11000
DIN CEN/TS 13388	CW004A
JIS	C1100

Chemical composition

Cu	≥ 99.90 %
O	0.005 .. 0.040 %

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