



Cu- ETP

COPPER

CHEMICAL COMPOSITION :

Cu min	99.90%
Oxygen	0.005-0.04 %

ALLOY DENOMINATIONS :

MATERIAL N° EN :	CW004 A
WN/MATERIAL N° DIN :	2.006
ROBERT LAMINAGE :	100
EN :	CU ETP
DIN :	E-CU 58
AFNOR :	CU-a1
UNS* :	C 11000

*Unified Numbering System (USA)

PHYSICAL PROPERTIES :

Density 20° C	8.94	Kg/dm ³
Melting point	1083	°C
Modulus of elasticity, longitudinal	127	GPa
Thermal Conductivity	390	W/M . K
Electrical Conductivity	≥ 55	M/Ω mm ²
Electrical resistivity	≤ 0.0188	Ω mm ² /M
Coefficient of linear expansion from 20 up to 300°C	17.7 x 10 ⁻⁶	K ⁻¹
IACS (International Annealed Copper Standard)	≥ 95	%

WORKABILITY :

Coldworking	Very good
Hotworking	Good (750-950°C)
Machining	Poor
Soldering, brazing	Very good
Tin soldering	Good
Polishing	Good
Annealing temperature	350-500°C
Stress relieving heat treatment temperature	150-200°C

MAIN APPLICATIONS :

Various electrical components,
Collectors strips, conductors
Deep drawing, stamping

CONDITIONING :

- In coils
- Cut to length, from 0.5 up to 3 m

AVAILABLE SIZES :

Widths	from 2 up to 350mm
Thickness	from 0.01up to 2.5mm

TOLERANCES :

Depending on product

QUALITY OF EDGES :

Slit edges



MECHANICAL PROPERTIES :

Cu- ETP

EN NORM

TEMPER	THICKNESS		Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION		Vickers HARDNESS		GRAIN SIZE
			min	max		0.10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	min	max	
R220 H040	0.2	5	220	260	(max 140)	33	42	-	-	-
			-	-	-			40	65	-
R240 H065	0.2	15	240	300	(min 180)	8	15	-	-	-
			-	-	-	-	-	65	95	-
R290 H090	0.2	15	290	360	(min 250)	4	6	-	-	-
			-	-	-	-	-	90	110	-
R360 H110	0.2	2	360	-	(min 320)	2	-	-	-	-
			-	-	-	-	-	110	-	-

(For reference only)

DIN NORM 17670 E-CU 58

TEMPER	THICKNESS	Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION		Vickers HARDNESS	
		min	max		0.10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	min	max
F20	> 5	200	250	100	42	36	-	-
H40	< 15	-	-	-	-	-	-	-
F22	≥ 0.2	220	260	140	42	36	-	-
H40	≤ 5	-	-	-	-	-	40	70
F24	≥ 0.2	240	300	180	15	12	-	-
H70	< 15	-	-	-	-	-	70	95
F29	≥ 0.2	290	360	250	6	-	-	-
H90	≤ 10	-	-	-	-	-	90	110
F36	≥ 0.2	360	-	320	-	-	-	-
H110	≤ 2	-	-	-	-	-	110	-

AFNOR NORM NF 51-101

TEMPER	Vickers HARDNESS		Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION 0.10 up to 2.5 mm A50 % min
	min	max	min	max		
Annealed	45	65	200	260	< 120	25
H12	75	105	260	320	> 250	10
H14.1	105	125	310	400	> 300	1

CERTIFIÉ ISO 9001:2008