



Cu Ni 18 Zn20

NICKEL SILVER

CHEMICAL COMPOSITION :

Cu	balance
Ni	18%
Zn	20%
Mn max	0.50%

ALLOY DENOMINATIONS :

MATERIAL N° EN :	CW409 J
WN/MATERIAL N° DIN :	2.0740
ROBERT LAMINAGE :	420
EN :	Cu Ni18 Zn20
DIN :	Cu Ni18 Zn20
AFNOR :	Cu Ni18 Zn20
UNS* :	C 76400

*Unified Numbering System (USA)

PHYSICAL PROPERTIES :

Density 20° C	8.75	Kg/dm ³
Melting point	1060-1110	°C
Modulus of elasticity, longitudinal	135	GPa
Thermal Conductivity	33	W/M . K
Electrical Conductivity	≥ 2	M/Ω mm ²
Electrical resistivity	≤ 0.50	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)	≥ 3	%

WORKABILITY :

Coldworking	Very good
Hotworking	Inappropriate
Machining	Medium
Soldering, brazing	Good
Tin soldering	Very good
Polishing	Very good
Annealing temperature	600-700 °C
Stress relieving heat treatment temperature	~300 °C

MAIN APPLICATIONS :

Springs
Pressing, folding, stamping
Component for precision instruments, electronic, optics.

AVAILABLE SIZES :

Widths	from 2 up to 350mm
Thickness	from 0.01up to 3.40 mm

CONDITIONING :

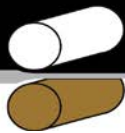
- In coils
- Cut to length, from 0.5 up to 3 m

TOLERANCES :

Depending on product

QUALITY OF EDGES :

Slit edges



MECHANICAL PROPERTIES :

Cu Ni 18 Zn20

EN NORM 1652

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	min	max
R380 H085	0.1	5	380	450	(max 250)	27	37	-	-	-	-
G020 G035			-	-	-	-	-	-	85	115	-
R450 H115	0.2	2	-	-	-	-	-	-	120	0.015	0.030
R500 H160			-	-	-	-	-	-	-	110	0.025
R580 H180	0.1	5	450	520	(min 250)	9	18	-	-	-	-
R640 H200			-	-	-	-	-	-	115	160	-
	0.1	2	500	590	(min 410)	3	-	-	-	-	-
			-	-	-	-	-	-	160	190	-
	0.1	2	580	670	(min 510)	-	-	-	-	-	-
			-	-	-	-	-	-	180	210	-
	0.1	2	640	730	(min 600)	-	-	-	-	-	-
			-	-	-	-	-	-	200	230	-

(For reference only)

DIN NORM 17670

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
F38 H85	> 0.1 < 5	380	450	max 250	37	32	-	-
F45 H115	≥ 0.1 ≤ 5	450	520	min 250	18	15	-	-
F52 H160	≥ 0.1 < 2	520	610	min 430	6	-	-	-
F58 H180	≥ 0.1 < 2	580	680	min 490	-	-	-	-
F68 H210	≥ 0.1 ≤ 2	680	-	min 630	-	-	-	-
		-	-	-	-	-	210	-

AFNOR NORM NF A 51-107

TEMPER	Vickers HARDNESS		Rm (MPa)		Re (MPa)	ELONGATION 0.10 up to 2.5 mm A50 % min
	min	max	min	max		
H11	120	150	450	520	250	20
H12	145	175	490	590	390	7
H13	170	200	560	640	480	5
H14	200	215	640	690	560	1
H15	> 215		> 690		630	-