



Al Cu Mg1

AVIONAL 102

CHEMICAL COMPOSITION :

Si	0.20 - 0.80%
Fe	0.50%
Cu	3.5 - 4.5%
Mn	0.40 - 1.00%
Mg	0.40 - 1.00%
Cr	0.10%
Zn	0.25%
Zr	0.25%
Others	0.05%

ALLOY DENOMINATIONS :

MATERIAL N° EN :	AW 2017 A
WN/MATERIAL N° DIN :	3.1325
ROBERT LAMINAGE :	870
EN :	Al Cu 4Mg Si (A)
DIN :	Al Cu Mg1
AFNOR :	A - U 4G (2017 A)
UNS* :	2017 A

**Unified Numbering System (USA)*

PHYSICAL PROPERTIES :

Density 20° C	2.78	Kg/dm ³
Melting point	510 - 650	°C
Modulus of elasticity, longitudinal	72	GPa
Thermal Conductivity	175 - 210	W/M . K
Electrical Conductivity	≥ 27	M/Ω mm ²
Electrical resistivity	≤ 0.037	Ω mm ² /M
Coefficient of linear expansion from 20 up to 300°C	23.6 x 10 ⁻⁶	K ⁻¹
IACS (International Annealed Copper Standard)	47	%

WORKABILITY AND CORROSION :

Coldworking : annealed	Very good
Coldworking : quenched	Medium
Hotworking : annealed	Very good
Hotworking : quenched	Medium
Machining	Good
Soldering	Medium (under gas protection)
Resistance welding	Medium
Polishing	Medium
Annealing temperature	350-500°C
Stress relieving heat treatment temperature	150-200°C
Corrosion in normal atmosphere	Medium
Corrosion in industrial and marine atmosphere	Bad

MAIN APPLICATIONS :

High strength components for aeronautics, automotive and machines
 High strength forged parts, defense application
 Watch hands

MAIN SPECIFICATIONS :

High mechanical strength
 Medium corrosion resistance
 High ductility, good forging performances

QUALITY OF EDGES :

Slit edges

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



EN NORM 485-2 (Al Cu4 Mg Si (A))

TEMPER	THICKNESS		Rm (MPa)		Rp 0.2		ELONGATION		HBS* HARDNESS
			min	max	min	max	10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	
O	≥ 0.4	1.5	-	225	-	145	12	-	55
	1.5	3.0	-	225	-	145	14	-	55
	3.0	6.0	-	225	-	145	13	-	55
T4	≥ 0.4	1.5	390	-	245	-	14	-	110
	1.5	6.0	390	-	245	-	15	-	110
T42	≥ 0.4	3.0	390	-	235	-	14	-	109
	3.0	12.5	390	-	235	-	15	-	109

(For reference only)

DIN NORM 1745

TEMPER	THICKNESS		Rm (MPa)		Rp 0.2	ELONGATION		HB* HARDNESS	STATE
	min	max	min	max	(Mpa) min	10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min		
W	0.35	3.0	-	215	≤ 140	13	11	50	annealed
F40	0.35	3.0	395	-	265	13	11	100	Hardened heat treated

(For reference only)

AFNOR NORM NF A 50-451

TEMPER	THICKNESS e millimètres	Rm (MPa)		Rp 0.2	ELONGATION	Metallurgical State
		min	max	(Mpa) min	0.10 up to 2.5 mm A65 % min	
annealed	0.4 ≤ e ≤ 1.6	-	220	Max	13	o
	1.6 < e ≤ 3.2	-	220	140	13	o
heat treated	0.4 ≤ e ≤ 1.6	390	-	Max	15	T4
	1.6 < e ≤ 6	390	-	140	15	T4