Constellium

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Technical Datasheet

AVIONAL®-100

EN AW-2017A / Al Cu4MgSi(A)

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BRIEF DESCRIPTION

Avional®-100 thick plates are used mainly for machine construction and apparatus subject to static or dynamic loading.

Typical applications of Avional®-100 include various supports and structural parts of machines.

PROCESSING METHODS

Weldability

- TIG/MIG difficult
- by resistance difficult

Anodizing

- technical good
- decorative moderate

Machinability good

Corrosion Behaviour

- moderate in inland atmosphere
- critical in marine atmosphere

AVAILABILITY

Avional®-100 plates are available in temper T451 (quenched - stretched - naturally aged) in the following dimensions :

Thickness (over … to)	**Max. Width**
3.4 - 6.5 mm	1520 mm
7.9 - 60 mm	2020 mm
61 - 70 mm	2000 mm
71 - 80 mm	1820 mm
81 - 90 mm	1520 mm
91 - 102 mm	1350 mm
102 - 110 mm	1120 mm
111 - 120 mm	1020 mm

(other dimensions on request)

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti +Zr
0.20 0.80	max. 0.7	3.5 4.5	0.4 1.0	0.4 1.0	max. 0.10	max. 0.25	max. 0.25

PHYSICAL PROPERTIES (nominal values)

Density	2.78 g/cm^3
Elastic Modulus	72000 MPa
Lin. thermal expansion coefficient (20°-100°C)	23.6 10^{-6} K^{-1}
Thermal conductivity (Temper T451)	125 - 140 W/mK
Electrical conductivity at 20°C (Temper T451)	19 - 21 MS/m

MECHANICAL STRENGTH

Min. tensile properties (Temper T451 / EN Standard 485-2)

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
3.4 - 6.0 mm	390	245	15
6.0 - 12.5 mm	390	260	13
12.5 - 40 mm	390	250	12
40 - 60 mm	385	245	12
60 - 80 mm	370	240	7
80 - 120 mm	360	240	6

Typical strength for various thicknesses

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
3.4 - 6.5 mm	420	265	20	125
7.9 - 25 mm	415	270	20	125
25 - 60 mm	415	265	20	125
60 - 120 mm	415	265	17	125