Constellium

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Technical Datasheet

AVIONAL®-150

EN AW-2024 / Al Cu4Mg1

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BRIEF DESCRIPTION

Avional®-150 thick plates are mainly used for machine construction and apparatus subject to high static or dynamic loading.

Typical applications include various supports and structural parts of machines.

PROCESSING METHODS

Weldability

• TIG/MIG	difficult
• By resistance	difficult

Anodising

• technical	moderate
• decorative	not suited

Machinability good

Corrosion behaviour

- moderate in inland atmosphere
- critical in marine atmosphere

AVAILABILITY

Avional®-150 plates are available in temper T351 (quenched-stretched-naturally aged) in the following dimensions :

Thickness (over ... to…)	**Max. width**
3.4 – 6.5 mm	1520 mm
7.9 – 42 mm	2020 mm
42 – 60 mm	1960 mm
60 – 70 mm	1700 mm
70 – 80 mm	1420 mm
80 – 90 mm	1260 mm
90 – 102 mm	1010 mm

(other dimensions on request)

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti +Zr
max. 0.40	max. 0.45	4.0 4.6	0.5 0.8	1.3 1.7	max. 0.05	max. 0.18	max. 0.10

PHYSICAL PROPERTIES (nominal values)

Density	2.78 g/cm^3
Elastic modulus	73000 MPa
Lin. thermal expansion coefficient (20°-100°C)	23.2 10^{-6} K^{-1}
Thermal conductivity (Temper T351)	110 - 130 W/mK
Electrical conductivity (Temper T351, 20°C)	16 - 19 MS/m

MECHANICAL STRENGTH

Min. tensile properties (Temper T351 / EN Standard 485-2)

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
3.4 - 6.5 mm	440	290	14
7.9 - 12.5 mm	440	290	13
12.5 - 40 mm	430	290	11
40 - 80 mm	420	290	8
80 - 100 mm	400	285	7

Typical strength for various thicknesses

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
3.4 - 6.5 mm	450	300	19	135
7.9 - 15 mm	450	300	18	135
15 - 25 mm	440	300	16	135
25 - 60 mm	440	300	16	135
60 - 102 mm	430	295	14	135