Technical Datasheet

EN AW-7022 / AlZn5Mg3Cu

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BRIEF DESCRIPTION

7022 thick plates have been optimised to provide excellent **machinability, shape stability** and **high strength.** 7022 is therefore ideal for industrial tools. Applications include injection and blow-moulds for plastic bottles, plastic containers and shoes as well as heating plates, mechanical guides, tooling supports, jigs and fixtures.

PROCESSING METHODS

Weldability

TIG/MIG	possible
filler alloy	AA 5183 AA 5356
by resistance	good

Surface Treatments

Anodizing

technical	good
decorative	not adequate
Polishing	excellent
Hard Chroming	good
Chemical Nickel-Plating	good
Chemical texturing	well adapted
Machinability	excellent

AVAILABILITY

7022 plates are delivered in temper T651 (quenched – stretched – artificially aged) in the following dimensions :

Thickness	Max. width
8.0 - 70 mm	2020 mm
71 - 80 mm	1900 mm
81 - 90 mm	1820 mm
91 - 100 mm	1520 mm
101 - 110 mm	1400 mm
111 - 127 mm	1270 mm
128 - 140 mm	1020 mm

For thicknesses above 140 mm, the alloy AA 7035 is recommended.

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti +Zr
max. 0.5	max. 0.5	0.5 1.0	0.1 0.40	2.6 3.7	0.1 0.3	4.3 5.2	max. 0.2

PHYSICAL PROPERTIES (nominal values)

Density	2.76 g/cm^3
Elastic Modulus	72000 MPa
Lin. thermal expansion coefficient (20°-100°C)	23.6 10^{-6} K^{-1}
Thermal conductivity (Temper T651)	120 - 150 W/mK
Electrical conductivity (Temper T651, 20°C)	18 - 22 MS/m

MECHANICAL STRENGTH

Min. tensile properties (Temper T651)[1)]

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
12.5 - 25 mm	540	460	8
25 - 50 mm	530	460	7
50 - 100 mm	500	420	6
100 - 140 mm	490	400	6

1) These guaranteed values are much higher than EN AW-7022 T651 values

Typical strength for various thicknesses

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
8.0 - 25 mm	555	495	9	170
25 - 100 mm	550	495	8	165
100 - 140 mm	545	490	7	165