Constellium Valais SA
CH-3960 Sierre
Switzerland
Tel: +41(0) 27 457 5111

Constellium France SAS
F – 63502 Issoire
France
Tel: +33 (0)4 73 55 50 50

Technical Datasheet

ALUMOLD® 400 rolled

Reference specification: IS 5626

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BRIEF DESCRIPTION

The Alumold® 400 alloy has been optimised to provide **good shape stability** and **high strength properties throughout the plate thickness**.
Typical applications include blow moulds, thermoforming moulds and injection moulds for small series.

PROCESSING METHODS

Weldability

- TIG/MIG welding well adapted*
- repair welding TIG/MIG well adapted*
  filler alloys: AA 5180, AA 4145

* A drop of strength in the proximity of the weld shall be taken into account. The corrosion resistance of the heat affected zone is reduced.

Surface treatments

Anodizing	
• technical / hard	excellent
• decorative	not suited
Polishing	good
Hard chrome plating	well adapted
Chemical nickel plating	well adapted
Chemical texturing	well adapted
Machinability	excellent*

* Plates in Alumold® 400 are supplied in stress relieved condition, either by stretching or by compression. No further thermal treatment is recommended.

AVAILABILITY

Alumold® 400 rolled plates are available in tempers T651 or T652 in following dimensions :

Thickness (over … to …)	**Width** T651	T652
25 - 152.4 mm	1500 mm	
152.4 - 203.2 mm	1020 mm	1500 mm
203.2 - 305 mm		1450 mm

(other dimensions on request)

CHEMICAL COMPOSITION

Alumold® 400 is based on an alloy of the 7000 series.

PHYSICAL PROPERTIES (nominal values)

Density	2.79 g/cm^3
Elastic modulus, tensile	72000 MPa
Elastic modulus, compression	73000 MPa
Poisson's coefficient	0.33
Lin. thermal expansion coefficient (20°-100°C)	23.5 10^{-6} K^{-1}
Thermal conductivity (20°C)	122 W/m·K
Specific heat (20°C)	960 J/kg·K
Thermal diffusivity	45.5·10^{-6} m^2/s

MECHANICAL STRENGTH

Min. tensile properties (Tempers T651 / T652, at ¼-thickness)

Thickness (over ... to ...)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
25 - 38.1 mm	440	390	9
38.1 - 76.2 mm	415	370	8
76.2 - 127 mm	415	370	7
127 - 152.4 mm	400	350	7
152.4 - 203.2 mm	395	340	6
203.2 - 254 mm	390	330	5
254 - 305 mm	sans valeurs garanties		

Typical strength for various thicknesses

Thickness (over ... to ...)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	Hardness HB*
25 - 38.1 mm	465	415	12	140
38.1 - 76.2 mm	440	395	11	130
76.2 - 127 mm	440	395	10	130
127 - 152.4 mm	430	380	10	130
152.4 - 203.2 mm	425	370	9	125
203.2 - 254 mm	420	360	9	125
254 - 305 mm	400	340	5	120

*only for information

TOLERANCES

Plate thickness (over … to …)	Temper	Thickness tolerance	Flatness [mm/m] long.	transv.
25 - 60 mm	T651	+ 1.8 / - 0 mm	0.2	0.2
60 - 80 mm	T651	+ 2.2 / - 0 mm	0.2	0.2
80 - 100 mm	T651	+ 3.0 / - 0 mm	0.2	0.2
100 - 203.2 mm	T651	+ 3.5 / - 0 mm	0.2	0.2
150 - 305 mm	T652	+ 6 / - 0 mm	0.4	0.2