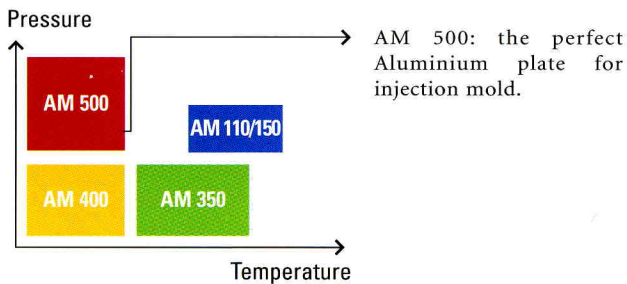


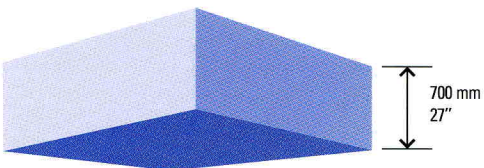
ALUMOLD® 500 forged

Description

Alumold® 500 forged gives superior mechanical properties with high elongation, providing a thick and durable product where hardness and performance are required.



Dimensions



Now available in thickness 175 - 700 mm (6 - 27 inch), widths 1220-1460 mm (48 - 57.4 inch).

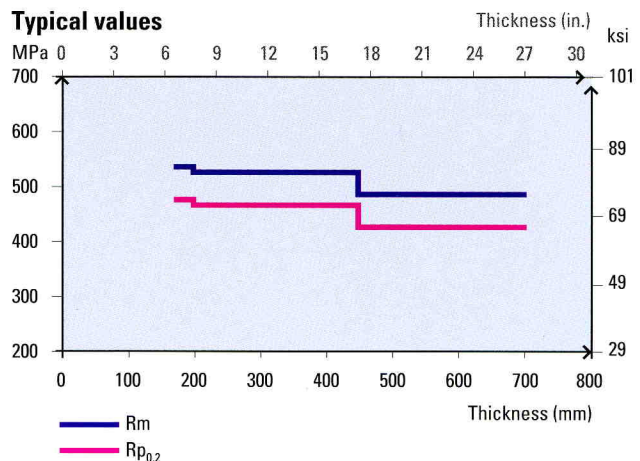
Minimum and maximum lengths available depend on their cross section. Our sales office will be pleased to advise on these limits.

Mechanical properties

Thickness (mm)	Minimum values			Typical values		
	Rm MPa	Rp _{0,2} MPa	A %	Rm MPa	Rp _{0,2} MPa	A %
175 ≤ th ≤ 200	475	420	4	530	470	10
200 < th ≤ 300	465	400	3.5	520	460	9
300 < th ≤ 400	450	370	3	520	460	8
400 < th ≤ 450	430	350	3	520	460	7
450 < th ≤ 700	410	340	3	480	420	7

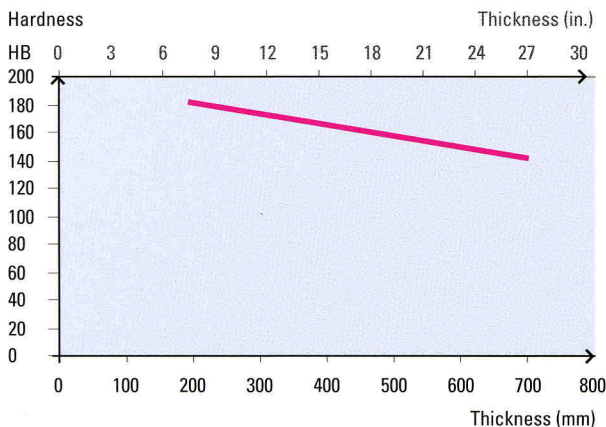
Thickness (inch)	Minimum values			Typical values		
	Rm ksi	Rp _{0,2} ksi	A %	Rm ksi	Rp _{0,2} ksi	A %
6 ≤ th ≤ 7	69	61	4	77	68	10
7 < th ≤ 11	67	58	3.5	76	67	9
11 < th ≤ 15	65	54	3	76	67	8
15 < th ≤ 17	62	51	3	76	67	7
17 < th ≤ 27	60	49	3	70	60	7

MPa, Rp_{0,2}, A value at 1/4 thickness (LT direction).



ALUMOLD® 500 forged

Brinell hardness



HB: ball 2.5 mm, 62.5 kg (indicative value).

Reference specification

Alumold® 500 forged is 7xxx series.
Alcan specification IS 5505A.

Heat treatment and internal stress relieving

Plates are delivered after complete thermal treatment and internal stress relieving. No further thermal treatment is recommended.

After a special quenching, all plates are stress relieved by a unique compression process.

Physical properties

Metric	AM 500 forged	Imperial
2.82 kg / dm ³	Specific gravity	0.102 lbm / in ³
23.7 x 10 ⁻⁶ / °C	Coefficient of thermal expansion	13.2 x 10 ⁻⁶ / °F
153 W / m.°C	Thermal conductivity	88 Btu / h.ft.°F
857 J / kg.°C	Specific heat	0.205 Btu / lb.°F
63 x 10 ⁻⁶ m ² / sec	Thermal diffusivity	5.8 x 10 ⁻⁶ ft ² / sec
72 000 MPa	Tensile modulus	10 400 ksi
73 000 MPa	Compression modulus	10 600 ksi
0.33	Poisson's coefficient	0.33
475 - 630 °C	Melting range	887 - 1 166 °F

Usage properties

	AM 500 forged	
Milling	Swarf breaking	Excellent
	Surface brightness	Excellent
Polishing	Aesthetic	Excellent
	Optical	Good (add surface treatment)
Engraving / Etching	Chemical etching	Good
	Laser etching	Excellent
Surface treatments	Hard anodizing	Excellent
	Nickel plating	Excellent for cavity: abrasion resistance
	PVD / PA CVD	Dedicated for aluminium: high hardness
Welding	Thermal spraying / Laser spray	Thick and hard layer: parting line resistance
	Refilling (TIG)	Good: DC / Helium / rod 5180, 5356, 4047, 4145

© facilitiescom RCS Lyon 425 108 149 - 08/2005

ALUMOLD®

The present document may under no circumstances be considered contractually binding. The information it contains is purely indicative and may under no circumstances be considered binding on Alcan or its subsidiaries, nor may it be used to contradict national or international regulations on the use, calculation or construction of aluminium alloy structures. It is the user's responsibility to check the accuracy of the information, refer to specialist works and contact experts of the Alcan group and those skilled in the field prior to use.