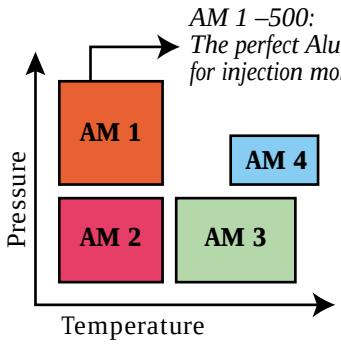
ALUMOLD 1-500 FORGED

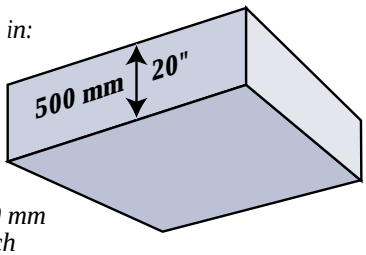
Extreme gauge for extreme properties

AM 1-500 Forged gives superior mechanical properties with high elongation, providing a thick and durable product where hardness and performance are required.



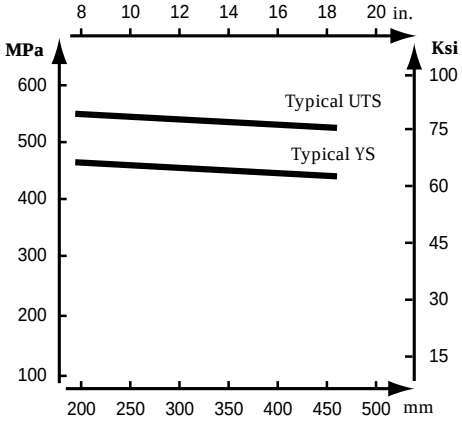
Now available in:

thickness
175-500 mm
6-20 inch

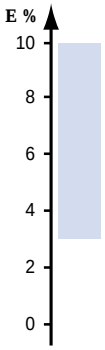


widths
1220 & 1460 mm
48 & 57.4 inch

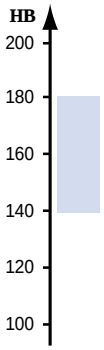
Mechanical properties



Elongation



Brinell Hardness



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

From Pechiney specification IS 5505A

Thickness mm	Minimum values			Typical values		
	MPa		%	MPa		%
	UTS	YS	E%*	UTS	YS	E%*
175-200	475	420	4	530	470	10
200-300	465	400	3.5	520	460	9
300-400	450	370	3	520	460	9
400-450	440	350	3	520	460	9
450-500			3			9

UTS, YS 0.2, E% value at 1/4 thickness (LT direction)

Thickness inch	Minimum values			Typical values		
	Ksi		%	Ksi		%
	UTS	YS	E%*	UTS	YS	E%*
6-7	69.3	61.3	4	77.4	68.6	10
7-11	67.9	58.4	3.5	76	67.1	9
11-15	65.7	54	3	76	67.1	9
15-17	64.2	51	3	76	67.1	9
17-19			3			9

PECHINEY

ALUMOLD®

Heat treatment and internal stress relieving

Plates are delivered after complete thermal treatment and internal stress relieving. No further treatment is recommended. After a special quenching, all plates are stress relieved by a unique compression process.

Physical properties

EUROPE	AM 1 – 500 FORGED	US
2.82 kg / dm^3	Specific gravity	0.102 lbm / in^3
23.7 10^{-6} / °C	Coefficient of thermal expansion	13.2.10^{-6} / °F
153 W / m.°C	Thermal conductivity	88 Btu / h.ft.°F
857 J / kg.°C	Specific heat	0.205 Btu / lb.°F
63.10^{-6} m^2 / sec	Thermal diffusivity	5.8.10^{-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 - 1166 °F

Usage properties

AM 1 – 500 FORGED		
Milling	Swarf breaking Surface brightness	Excellent Great
Polishing	Aesthetic Optical	Excellent OK (add surface treatment)
Engraving / Etching	Chemical etching Laser etching	Very good Excellent
Surface treatments	Hard Anodizing Nickel, Chromium Platting PVD / PA CVD Thermal spraying / Laser spray	Excellent Excellent for cavity : abrasion resistance Dedicated for aluminum : high hardness Thick and hard layer : parting line resistance
Welding	Refilling (TIG)	Good: DC / Helium / rod 5180, 5356, 4047, 4145

The present brochure is not contractual, and shall, in no way, incur the liability of Pechiney on account of the information contained herein. This information is given purely as a guide. It is up to readers to check that it is accurate and to consult the Pechiney Group and other specialists before design, conception or use.

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