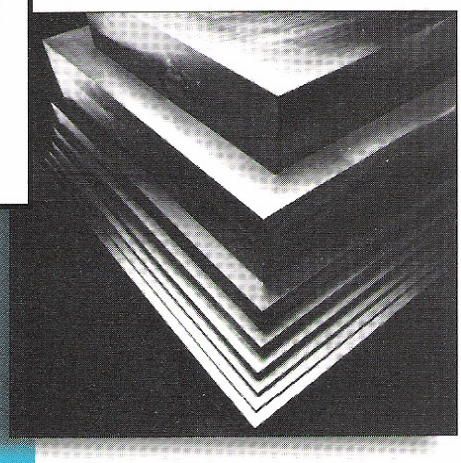
ALPASE M-1™

ALUMINUM MOLD PLATE – A PROVEN PRODUCT DEVELOPED ESPECIALLY FOR THE PLASTIC AND MOLDING INDUSTRIES



Developed exclusively by Alpase and introduced in 1988, M-1 is an extraordinarily dense, dimensionally stable, high strength (without heat treatment) aluminum plate designed especially for the growing high-temp plastic and mold industries.

More cost-effective than wrought aluminum and tool steel, M-1 lowers real-time production costs through machinability advantages. Tool steels are too hard – wrought alloys are too soft and gummy. All increase tool costs and machine time, except M-1.

M-1 PRODUCT FEATURES AND BENEFITS

- **Density –** A very tight grain structure – when ultrasonic inspected will have **no** indications of **porosity.**
- **High Brinell Hardness** throughout the entire plate regardless of thickness.
- **More Machinable** than other aluminum alloys. The center of the plate is never gummy regardless of thickness.
- **No Heat Treatment** for hardness and machinability is required.
- **Dimensional Stability –** M-1 maintains dimensional stability during machining without stress relieving, unlike wrought alloys.
- **Weldable,** maintaining its high mechanical properties without additional heat treatment – unlike wrought alloys.
- **Hardcoat Anodizable** and can be **Nickel Coated.**
- **More Cost Effective** than tool steel or wrought aluminum molds. Decreases production cost and increases productivity.

M-1 APPLICATIONS

Injection Molding M-1 aluminum is used for mold applications where 1 to12 cavities are required. The faster cool-down rate of M-1 will increase productivity; tool steel molds have a much slower cool-down rate.

Importantly, M-1 aluminum molds are approximately one-third the cost of tool steel molds.

It is more cost-effective to make engineering changes with M-1 aluminum molds than re-working tool steel or wrought aluminum alloys.

Wrought alloys must be rough-machined and, because of the softness of the material, heat treated to the required hardness and re-set up for the final machine process. *With M-1 this costly process is eliminated.*

Blow Molding M-1 can be used for blow molding because it has a high Brinell hardness.

Structural Foam Molding The dimensional stability and uniform hardness of M-1 is rated perfect for structural foam molding.

R.I.M. Molding The proven high thermal fatigue properties of M-1 aluminum mold plate make it the number one choice for R.I.M. molding.

R.T.M. Molding The unique combination of hardness, thermal fatigue resistance, polishablilty and weldability has made M-1 the specified choice for R.T.M. molds.

Rubber Molds From simple mat molds to sophisticated aerospace parts, the dense grain structure in combination with the dimensional stability, make M-1 your number one choice.

Typical Properties

Typical Yield	30,000 psi*
Typical Tensile Strength	43,000 psi*
Typical Elongation	7% to 9%
Brinell Hardness	95*
Density	.101 per cubic inch
Coefficiency of expansion	12.9×10^{-6}
Electrical Conductivity	39% International Annealed Copper Standard
Thermal Conductivity	1103 English Units (77°F)
Modulus of Elasticity	$10.8 \text{ KSI} \times 10^{3}$

* Over 10.5 thick, inquire.

Tolerances

Length, Width, Thickness	Produced to Plus Side of Nominal Tolerances
Finish	Rough Machined
Sides	Saw Cut

Standard Sizes

Thicknesses	From 2" to 30.00 in.
Widths	Up to 63 in.
Lengths	Up to 170 in.
Non-Standard Thicknesses	Special Inquiry
Close Tolerances	Special Inquiry

AUTHORIZED ALPASE DISTRIBUTOR

New Technologies In Aluminum

ALPASE

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