

ALPASE M-1

ALUMINUM MOLD PLATE

DEVELOPED FOR THE PLASTIC AND MOLDING INDUSTRIES



TST INC

TIMCO STANDARD TANDEM ALPASE

13428 Benson Ave
Chino, CA 91710 USA
Phone: 951.685.2155
www.alpase.com
www.tst-inc.com

Alpase is a leading integrated cast plate producer. M1 cast aluminum mold block is the brand leader for molding applications worldwide. It's attributes include high strength, stability during machining and uniform grain. M1 was designed by the plastics and mold industry.

M1 has excellent elevated temperature properties and heat transfer capabilities in a cast product allowing quicker cycle times during the manufacturing process. This makes Alpase's M1 more cost effective than wrought aluminum and tool steel by lowering machining costs.



M-1 Product Features and Benefits

Density: M-1 offers a very tight equiaxed grain structure that is metallurgically sound throughout. This is achieved using modern technologies in casting, cooling and homogenization processes.

Brinell Hardness: Highly consistent throughout the entire plate regardless of thickness.

Machinability: Aluminum machining rates are over 3 times that of steel and M-1 is rated very high among aluminum alloys. M-1 has the capability of achieving an excellent surface finish.

Weldability: Maintains its mechanical properties in and adjacent to weld areas without additional heat treatment unlike wrought alloys.

Dimensional Stability: Unlike wrought alloys, M-1 maintains dimensional stability during machining without stress relieving.

Hardcoat Anodize: M-1 conforms well to hard-coat anodizing as well as Nickel Coating.

Cost Efficiency: Decreases production costs and increases productivity better than tool steel or wrought aluminum molds. High thermal conductivity allows for shorter cycle times.



ALPASE M-1

ALUMINUM MOLD PLATE

DEVELOPED FOR THE PLASTIC AND MOLDING INDUSTRIES

M-1 APPLICATIONS

Injection Molding: Thermal conductivity 3 to 5 times greater than steel allowing for reduced cycle times - also works with high temperature plastics when wrought aluminum could fail

Structural Foam Molding: Dimensional stability and uniform hardness of M-1 is ideal for structural foam molding.

Composite Molds: Can offer higher mechanical properties at the molding temperatures required - at elevated temperatures it will also regain its mechanical properties after cycle where wrought aluminums could have permanent loss

Tire Molds: industry leading thermal conductivity results in lower cycle times which make M-1 the perfect alloy.

R.I.M. Molding: 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: Unique combination of hardness thermal fatigue resistance, polish-ability and weld-ability 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 dimensional stability, make M-1 your number one choice.

Blow Molding: M-1 is best used for blow molding due to its high Brinell hardness and high thermal conductivity.

Rotational Molds: Size availability along with machining advantages make M-1 the best along with most cost effective choice.

M-1 TYPICAL PROPERTIES

Typical Tensile Strength	38 ksi	Coefficient of Expansion	12.9×10^{-6} (68-392°F)
Typical Yield	20 ksi	Electrical Conductivity	39% (I.A.C.S.)
Typical Elongation	7% - 9%	Microstructure	Vacuum Tight
Brinell Hardness	85 HB	Thermal Conductivity	95 Btu/ft x h x °F
Density	0.101 lb/in ³	Modulus of Elasticity	$10.8 \text{ KSI} \times 10^6$

Information provided does not imply guarantee of properties or capability of manufacturing or use.

New Technologies
In Aluminum



Melinda Barraza
Inside Sales
Direct: 951-727-3183
mbarraza@tst-inc.com

Todd Massie
VP of Business Development
Cell: 860-986-9976
Tmassie@tst-inc.com

13428 Benson Ave
Chino, CA 91710 USA
www.tst-inc.com

TST INC