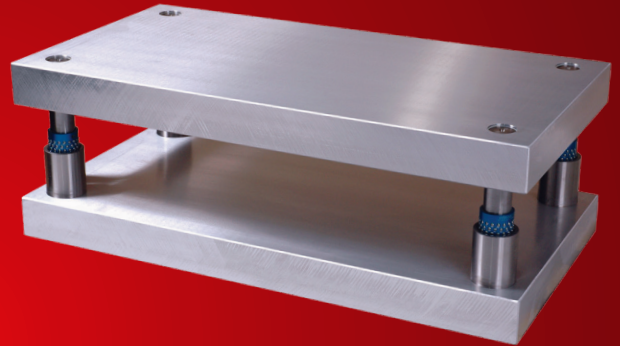


FORTAL[®]

ALUMINUM

DIE SETS

- *1/3 the weight of steel*
- *Five times faster to machine*

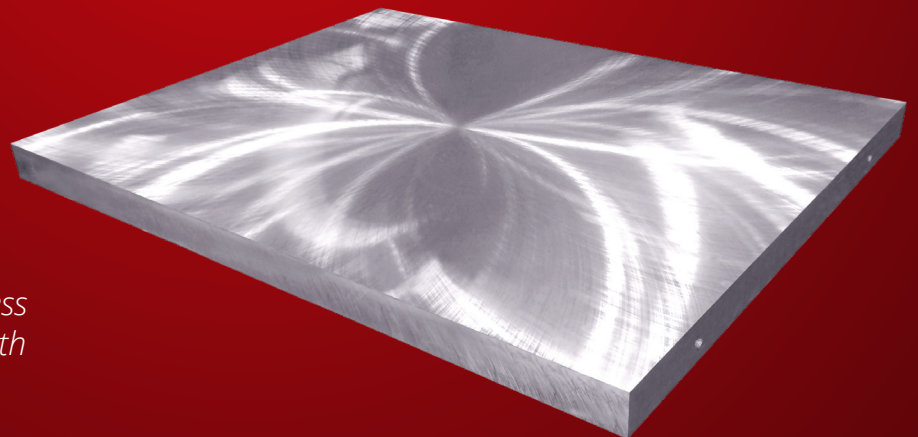


MOLD BASES

- *Superior thermal conductivity*
- *Improved polishability*

PLATES

- *Low residual stress*
- *High yield strength*



***CONSISTENTLY,
THE BEST CHOICE.***

CONSISTENTLY, THE BEST CHOICE.

Repeatability, reliability, and consistency are measures of great performance. Occasional greatness is not an option for continued success, and high performance. When it comes to your material choice consistency is something you should come to expect.

Fortal is an aircraft quality, 7000 series aluminum, with very consistent mechanical properties throughout the cross-section of the plate. This gives Fortal very low residual stress that rarely distorts during machining or use. This consistency also enables for clean, easy machining, free of hard spots or gumminess. These benefits lead to higher productivity and lower tooling costs.

The consistency of Fortal continues with unsurpassed cleanliness for improved polishability. A finish of between 3 to 5 microns is easily obtainable with conventional methods. Available through Superior is a Fortal Finish Reference Guide which presents 29 different surface treatments for producing a desired finish. Etching, anodizing, plating, and welding are other surface treatments benefitting from the consistency of Fortal.

DIMENSIONAL & PHYSICAL PROPERTIES

PARAMETERS	FORTAL HR ≤ 92 mm	FORTAL HR > 92 mm	ALLOY 7075 T651 102 mm - 152 mm	ALLOY 7075 T651 178 mm - 202 mm	ALLOY 6061 T651	STEEL 1020 HR
Tensile Strength (psi)	78,320	74,000	69,000	58,000	42,000	64,000
Yield (psi)	69,600	63,800	53,000	41,000	35,000	50,200
Shear Strength (psi)	48,000	48,000	48,000	48,000	27,000	48,000
Hardness Brinell	150	150	140	120	95	142
Density (pounds/inch ³)	0.1	0.1	0.1	0.1	0.1	0.28
Modulus of Elasticity (pounds/inch ²)	10.44 x 10 ⁶	10.3 x 10 ⁶	10.4 x 10 ⁶	10.0 x 10 ⁶	10.0 x 10 ⁶	30.0 x 10 ⁶
Linear Coefficient of Expansion (10 ⁶ x °F) between 68°F and 212°F	13.05	12.78	13.1	13.1	13.1	6.30
Thermal Conductivity $\left[\frac{\text{BTU} \cdot \text{in}}{\text{hr} \cdot \text{ft}^2 \cdot ^\circ\text{F}} \right]$	902	902	900	900	1160	360

Compared to 1020 steels, Fortal is 1/3 the weight and machines up to 5 times faster. In addition, Fortal is stronger and harder than mild steel and has a better modulus of elasticity for better shock absorption. With thermal conductivity more than double that of 1020, Fortal is an excellent conductor of heat. So Fortal is no light-weight when it comes to mechanically outperforming mild steel.

When compared to other aluminums or mild steels, Fortal consistently performs the best.

Now make it your choice, **the Best Choice.**

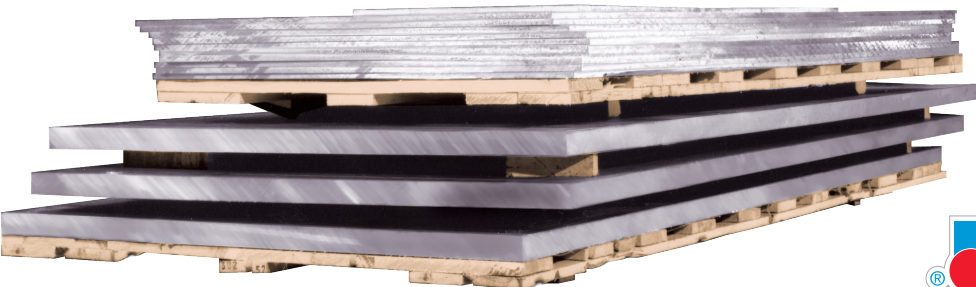


Plate is available in full sheets up to 202 mm thickness



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