

ALUMINIUM ALLOY - ROLLED**Precision Tooling Plate****DSM 2.1.4****Rolled Aluminium – Precision Tooling Plate:**

This product is made to a variety of brand names, all being a derivative of the **5000** series aluminium.

Initially cast as ingots or billets then cold worked into the desired form.

The alloying elements (primarily, magnesium) that are added to this series respond to cold working area reduction (eg: **Rolling**) creating a strain or work-hardened temper. This increase to strength & mechanical properties can be stabilized by **annealing**: a process of softening & conditioning a material for subsequent, economic metalworking operations. Then face machined to provide close tolerance dimensions

Features:

The grain structure will be elongated in the direction of rolling and irregular between the longitudinal, transverse and cross-section of the billet, these combine to make the mechanical properties different in all directions. The greater the thickness the larger the variation.

Advantages over Cast Tooling Plate:

- Welding; Anodising

Disadvantages over Cast Tooling Plate:

- Less stable

ASM (DEK) Applications:

Applications where Mounting/ Base Plates

These values are representative and should not be considered as definitive. For critical applications, refer to material data-sheet.

TYPICAL MECHANICAL PROPERTIES @25°C (H111) 6,3mm to 80mm	
DENSITY:	2660 Kg/m ³
YOUNGS MODULUS:	72 GPa
POISSONS RATIO:	0.33
YIELD STRENGTH	125 MPa
TENSILE STRENGTH	270 - 345 MPa

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ALUMINIUM ALLOY - ROLLED**Precision Tooling Plate****DSM 2.1.4****Key Features:**

METHOD	RESULT
Machining	V.Good
Spark eroding	V. Good
Welding - (Mig & Tig)	Excellent
Welding - Resistance (spot)	Excellent
Coating anodising (Technical)	Good (black only)
Coating anodising (Decorative)	Poor
Corrosion Resistance (uncoated)	Weather: V Good Marine: V Good

Supplied Forms:

- Plate: 6mm – 100mm

CHEMICAL COMPOSITION					
Silicon (Si)	0.4 % max	Chrome (Cr)	.05/0.25 %	Alumin.(Al)	balance
Magn. (Mg)	4.00 / 4.9 %	Zinc (Zn)	0.10 % max		
Mang. (Mn)	0.4 / 1.0 %	Titan. (Ti)	.05/0.25 %		
Iron (Fe)	0.4 % max	Copper (Cu)	0.10 % max		

Alternatives:

Alternative materials are allowed only with the express written permission of ASMPT. Please email details of your request to engineering_enquiries@asmpt.com

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