

MOLYBDENUM POWDER METALLURGY PRODUCTS

MOLYBDENUM ALLOY P/M – TZM Powder Metallurgy Sheet 2702

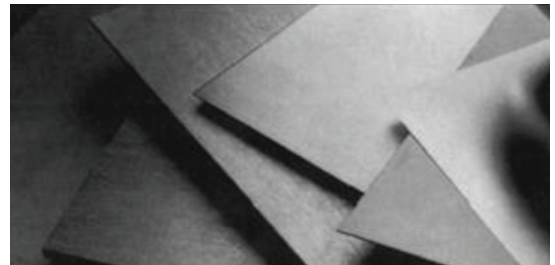
This specification covers rolles molybdenum alloy (molybdenum + 0.5 % titanium + 0.1 % zirconium) sheet produced from pressed and sintered powder metallurgy sheet bar.

CHEMICAL CHARACTERISTICS¹

(Mass fraction in % [cg/g]; ppm [µg/g])

The chemical composition of the molybdenum blended powder used for producing sheet bar shall conform to the following limits:

Mo (By Difference)	min.	99.2 %
N (Sintered Material)	max.	0.002 %
Ni (Sintered Material)	0.025	0.040 %
O	max.	0.005 %
Si	max.	0.005 %
Fe	max.	0.010 %
C	0.01 -	0.040 %
Zi	0.06 -	0.120 %
Ti	0.40 -	0.550 %



P/M - TZM

STRUCTURE

Sheet will be supplied in a stress-relieved condition unless otherwise requested.

MECHANICAL PROPERTIES

Tensile properties can be supplied on request when Purchase Order is placed.

¹ Information on testing methods on request.

PHYSICAL CHARACTERISTICS

THICKNESS TOLERANCE:

Thickness (inches)	Up to 12 inches wide (inches)	Over 12 - 24 inches wide (inches)
0.005 to 0.007	± 0.0006	± 0.0007
Over 0.007 to 0.008	± 0.0007	± 0.0008
Over 0.008 to 0.010	± 0.0008	± 0.0010
Over 0.010 to 0.018	± 0.0009	± 0.0010
Over 0.018 to 0.030	± 0.0015	± 0.0017
Over 0.030 to 0.187	± 5%	± 6%

WIDTH TOLERANCE:

Thickness* (inches)	Slit (inches)					Sheared (inches)	
	.125 - .250	over .250 - .500	over .500 - 6	over 6-12	over 12-24	.500 - 12	over 12 - 24
0.005 to 0.009	± 0.005	± 0.005	± 0.005	± 0.10	± 0.031	± 0.31	± 0.62
0.010 to 0.019		± 0.010	± 0.010	± 0.10	± 0.031	± 0.31	± 0.62
0.020 to 0.034			± 0.015	± 0.015	± 0.031	± 0.31	± 0.62
0.035 to 0.059			± 0.031	± 0.031	± 0.031	± 0.62	± 0.62
0.060 to 0.069				± 0.031	± 0.031	± 0.62	± 0.62
0.070 to 0.187						± 0.62	± 0.62

*For thickness 0.070 to 0.187 inches; sheet will be sheared, abrasive cut, band saw cut, or water jet cut to the tolerances shown.

Bedsheet is sold as a usable width, therefore any cracks or delaminations on the edges are acceptable as long as a 6, 12 or 24 inch minimum width can be yielded from the material.

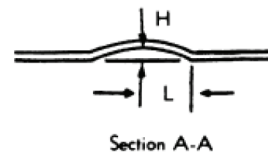
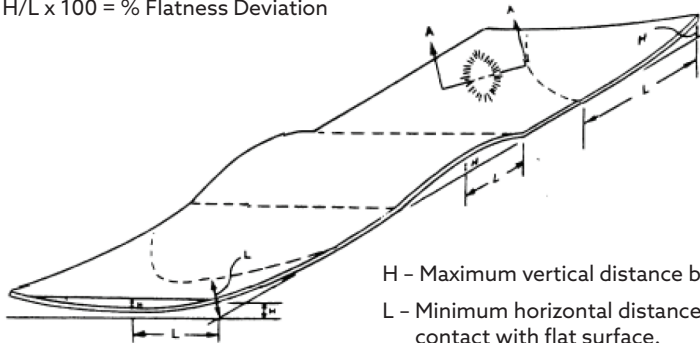
LENGTH TOLERANCE

For specified lengths, the tolerance for all sizes is + .0625 - 0 inch per foot of length. Edge Straightness-Maximum camber is .0625 inch per foot of length.

FLATNESS TOLERANCE

The total deviation from flatness will not exceed 4 % maximum, as determined by the following formula:

$$H/L \times 100 = \% \text{ Flatness Deviation}$$



H - Maximum vertical distance between flat surface and lower surface of sheet.

L - Minimum horizontal distance between highest point on sheet and point contact with flat surface.

SURFACE CONDITION

A matte finish will be supplied for sheet. The sheet will be of uniform quality, clean, and free from foreign matter. It will be essentially free from edge delaminations as determined by visual examination with exception of bedsheet width. Normal shear tears are not considered as delaminations.

Hazards identification in Advertising (REGULATION (EC) No 1272/2008 Article 48) none.

IDENTIFICATION

The material will be identified with appropriate specification number, ingot or lot number, and nominal size. Shipping containers will be marked with the name of the customer and the purchase order number.

REJECTION

Elmet Technologies must receive written notification of rejected material with the reason for rejection. The right is reserved to inspect rejected material at customer plant for claim validation. The material may be returned only after proper authorization.



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