

MOLYBDENUM POWDER METALLURGY PRODUCTS

PURE MOLYBDENUM

Sheet Standard Grade PS-300-2

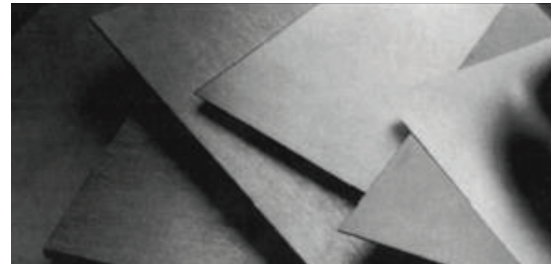
Rolled molybdenum sheet produced from pressed and sintered powder metallurgy sheet bar.

CHEMICAL CHARACTERISTICS¹

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

The chemical composition of the tungsten powder used in producing sheet bar shall conform to the following limits:

| Molybdenum (By Difference) | min. | 99.95 % |
|-------------------------------|------|---------|
| Mg | max. | 0.001 % |
| Mn | max. | 0.001 % |
| Ni | max. | 0.002 % |
| Al | max. | 0.002 % |
| Cu | max. | 0.002 % |
| Pb | max. | 0.002 % |
| Ti | max. | 0.002 % |
| Ca | max. | 0.003 % |
| Si | max. | 0.003 % |
| Sn | max. | 0.003 % |
| Cr | max. | 0.005 % |
| C | max. | 0.005 % |
| Fe | max. | 0.005 % |



PS-300-2

STRUCTURE

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

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) | |
|---------------------|------------------|---------------|-----------|------------|------------------|------------|
| | 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 | ± 0.010 | ± 0.031 | ± 0.31 | ± 0.062 |
| 0.010 to 0.019 | ± 0.010 | ± 0.010 | ± 0.010 | ± 0.031 | ± 0.31 | ± 0.062 |
| 0.020 to 0.034 | | ± 0.015 | ± 0.015 | ± 0.031 | ± 0.031 | ± 0.062 |
| 0.035 to 0.059 | | ± 0.031 | ± 0.031 | ± 0.031 | ± 0.062 | ± 0.062 |
| 0.060 to 0.069 | | | ± 0.031 | ± 0.031 | ± 0.062 | ± 0.062 |
| 0.070 to 0.187 | | | | | ± 0.062 | ± 0.062 |

*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 useable 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.

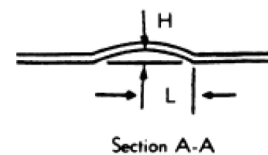
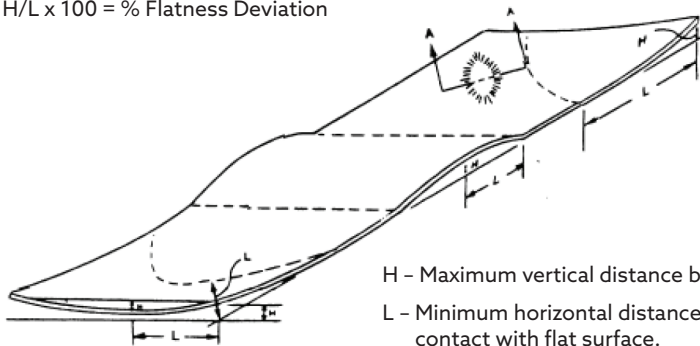
LENGTH TOLERANCE

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

Sheet is supplied with a matte or bright finish to 0.030 inch thickness. A matte finish will normally be supplied for sheet over 0.030 inch thick. 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 the exception of bedsheet width. Normal shear tears are not considered 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. Elmet Technologies reserves the right to inspect rejected material at the customer's plant for claim validation. The material may be returned only after proper authorization.



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