

## TUNGSTEN POWDER METALLURGY PRODUCTS

# PURE TUNGSTEN WF-3

## Foil 4201

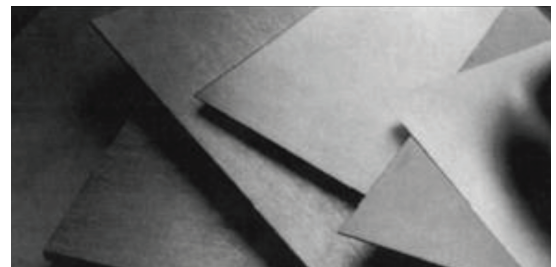
This specification covers rolled tungsten foil, from 0.002 through 0.0049 thick, produced from pressed and sintered powder metallurgy sheet bar.

### CHEMICAL CHARACTERISTICS<sup>1</sup>

(Mass fraction in % [cg/g]; ppm [ $\mu$ g/g])

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

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



WF-3

### STRUCTURE

Foil is supplied in the as-rolled condition. Stress-relieved material can be supplied upon request.

<sup>1</sup> Information on testing methods on request.

## PHYSICAL CHARACTERISTICS

### THICKNESS TOLERANCE:

| Thickness (inches) | Available Tolerance | Width (inches) |
|--------------------|---------------------|----------------|
| 0.002              | ± 0.0003            | 250 to 6       |
| 0.003              | ± 0.0004            | 250 to 12      |
| 0.004              | ± 0.0005            | 250 to 12      |
| 0.0049             | ± 0.0007            | 250 to 12      |

Tolerance for intermediate thickness will correspond to next heavier thickness shown.

### WIDTH TOLERANCE:

| Thickness (inches) | Slit Width (inches) |           | Sheared (inches) |
|--------------------|---------------------|-----------|------------------|
|                    | over .500 - 6       | over 6-12 | .500 - 12        |
| 0.005 to 0.009     | ± 0.010             | ± 0.015   | ± 0.31           |

### LENGTH TOLERANCE

For specific lengths, tolerance is + .0625 - 0 inch per foot of length. Tungsten foil is supplied in a coil having a minimum internal diameter of 3 inches, with a minimum coil length of 10 feet.

### SURFACE CONDITION

Foil will have a bright finish and will be essentially free of surface defects or edge delaminations as determined by visual examination. Special mirror finish material is available upon request.

**Hazards identification in Advertising (Directive 67/548/EEC Article 26, Directive 1999/45/EC Article 13 and 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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