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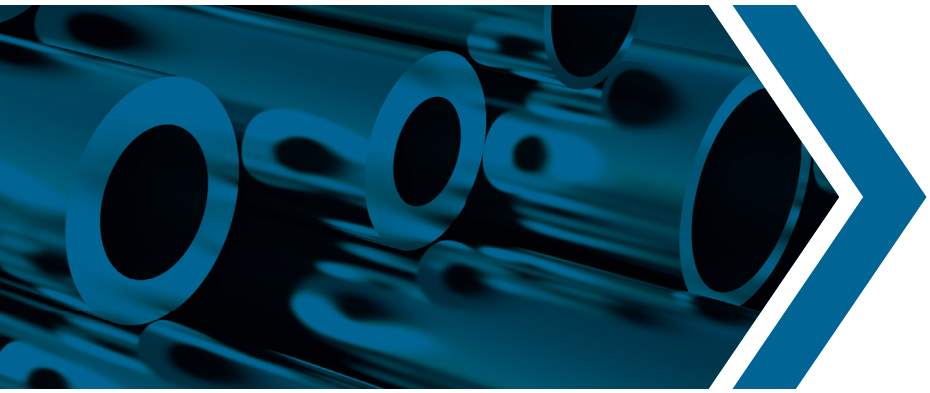

ELMET TECHNOLOGIES

MOLYBDENUM POWDER PRODUCTS

ROTATABLE SPUTTERING TARGET Gen 8.5 Molybdenum

This specification covers the assembled(bonded) rotatable sputtering target: Consisting of extruded molybdenum tube produced from pressed and sintered powder metallury and bonded to Titanium backing tube.

MATERIAL SPECIFICATION:

Molybdenum Characteristics (Mass fraction in %)

Mo	min. 99.95% (excluding gases)	Method by difference
Cr	max. 0.005 %	ICP-OES
Fe	max. 0.005 %	ICP-OES
Mg	max. 0.001 %	ICP-OES
Ni	max. 0.002 %	ICP-OES
Si	max. 0.003 %	ICP-OES
Sn	max. 0.003 %	ICP-OES
W	max. 0.03 %	ICP-OES

Gases:

C	max. 0.005 %	Combustion Infrared
O	max. 0.005 %	Inert Gas Fusion

Titanium
Purity >99.95 %

DIMENSION SPECIFICATION:

Reference Dimensions:
Target material length: 2,692 mm
Outer Diameter: 167 mm
Backing Tube(Titanium) 2,940 mm
Backing Tube(Titanium) dia: 133 mm

Actual Dimensions:
Drawing 102237210 current revisions

Inspected dimensions supplied on Sputtering Target Assembly Layout Report

BONDING SPECIFICATION:
Bonding condition shall be inspected by Ultra-sonic scan method(Cscan)

Bonding Area >97%

Largest Single Void 20mm

IDENTIFICATION:
Each Tube shall be identified with lot number, label will be adhered to tube bag listed in section 5 Tube ID will be etched on end face of each tube.

QUALITY DOCUMENTS:
For each lot of tubes a certification will be supplied and will include the following:

> Certification of Analysis of Molybdenum tube which will include Titanium Tube Identification number

> Sputtering Assembly Layout Report, Bonding Inspection Report, Ultrasonic C-Scan of bond

PACKAGING:
Tube will be placed in polythene bag which will be back filled with Argon and sealed, Label with identification of tube will be adhered to outside of bag. Second polythene bag will be place around tube back filled with Argon and sealed. Two tubes will be placed in Aluminum crate with foam cradles used to avoid movement during shipping.

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