1. Dimensions and product properties

1.1 Diameter and guaranteed production tolerance

Diameter [mm]	Quality	
	Ground	
	Diameter tolerance [mm]	Cylindrical tolerance [mm]
3.17 - 9.9	± 0,05	0,05
10.0 - 19.9	± 0,10	0,10
20.0 - 34.9	± 0,25	0,25
35.0 - 50.0	± 0,40	0,40
	cleaned	
3.17 - 9.9	± 0,08	0,08
10.0 - 15.9	± 0,12	0,12
16.0 - 34.9	± 0,20	0,20
35.0 - 50.0	± 0,40	0,40
50.1 - 80.0	± 0,75	0,75
> 80	± 1.50	1.50
	turned	
30.0 - 40.0	± 0,20	0,10
40.1 - 50.0	± 0,30	0,15
50.1 - 80.0	± 0,40	0,20
> 80	± 1.00	0.50

1.2 Straightness

The maximum deviation of the straight line is 2.5 mm/m.

1.3 Guaranteed length tolerances

Diameter 0.50 – 30.0 mm							
Nominal length	[mm]	> 6 - 30	> 30 - 120	> 120 - 400	> 400 - 1000	> 1000 - 2000	> 2000
Length tolerance	[mm]	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2.0
Diameter > 30.0 mm							
Nominal length	[mm]	15 - 30	> 30 - 120	> 120 - 400	> 400 - 1000	> 1000 - 2000	> 2000
Length tolerance	[mm]	± 1.0	± 1.5	± 2.5	± 4.0	± 6.0	± 8.0

1.4 Mechanical properties of annealed rods*

Diameter [mm]	Rm [MPa]	Yield strength [MPa]	Elongation [%]
3.17 – 63.5	min. 172	min. 103	min. 25

* Upon request, the rods can also be supplied in unannealed condition

2. Non destructive test

For diameters > 15.00 mm:	Ultrasonic testing
For diameters 0.50 – 50.00 mm:	Eddy current test on ground rods

3. Surface

Chemically cleaned	Ground	Turned
Ø 3.17 - 120.0 mm	Ø 3.17 – 50.0 mm	Ø > 30.0 mm

3.1 Roughness

Diameter [mm]	**R_a** ground [µm]	**R_a** turned [µm]
Ø 3.17 - 50.0	< 1.2	-
Ø > 30.0	-	< 3.2

4. Chemical composition

Chemical analysis: [a]	Random chemical analyses, guaranteed analysis values see attachment A.

[a] Details of the analysis method can be made known upon request

5. Packaging, labelling, storage and certification

5.1 Packaging, labelling and storage

Rods up to 6 mm diameter will be delivered in bundles, larger sizes will be packed individually.

End packing: wooden case
Special packings: extra costs will be invoiced.

Each package is provided with a label with the following information:

Producer's name:	**PLANSEE**
PLANSEE order number:	
Lot number:	
Material number:	
Material:	**Tantalum**
Dimensions:	**Rod diameter and length**
Surface:	
Quantity:	**Total quantity** in **m** or **kg**
Date:	

The Tantalum-rods must be kept in a dry place and protected from mechanical damage; it is best to keep the rods in their original packing until used.
Special packing should be used if the goods are stored under unusual conditions (aggressive atmosphere, sea air, …).

5.2 Certification

Certificate: [a]	**Test report 2.2**
According to EN 10 204	**Inspection certificate 3.1**[b]

[a] Upon customer request
[b] Extra costs are charged

6. Order instructions

Required information:	
- Product description	- Quantity (**m** or **kg**)
- The number of this specification **must** be mentioned	- Required certificate
- Diameter	- Special packing

For further information on our delivery possibilities, please look into our http://www.plansee.com

Attachment A: Chemical Analyses

Element	Guaranteed analyses max. [µg/g]
Al	20
Cd	10
Co	20
Cr	10
Cu	10
Fe	100
K	5
Mg	5
Mn	10
Mo	100
Na	5
Nb	400
Ni	50
Pb	10
Ti	50
Zn	10
Zr	10
W	100
Ta	**min. 99.9 %** *)
C	30
H	5
N	30
O	100
S	10
Si	50

*) metallic purity