

Information about the content

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High performance materials exhibit outstanding properties and therefore ensure the highest quality when used under the extremely demanding mechanical, thermal and chemical conditions associated with the production of glass. Through the application of functional coatings, existing processes are optimised and new applications can be realised. The SIBOR® coating, which was developed and patented by PLANSEE, offers protection against oxidation at high temperatures and oxidising atmospheres, lasting for long periods of time depending on the temperature.

The typical oxidation protection is:

- 5000 h at 1200 °C (2192 °F)

- 500 h at 1400 °C (2552 °F)

- 50 h at 1600 °C (2912 °F)

SIBOR® allows the installation of glass melting electrodes and glass tank reinforcements in a cold glass tank before the firing up process starts, without the risk of losing the molybdenum component due to oxidation.

1 Dimensions and tolerances

1.1 Substrates

1.1.1 Glas melting electrodes:

Diameter 31,75 - 80 mm and length up to max. 1900 mm
or diameter 31,5-125 mm and length up to max. 1300 mm

1.1.2 Glass tank reinforcements:

Flat products: Max. dimensions: 1040 x 650 x 500 mm

Tube material: Diameter max. 580 mm and length max. 500mm

Rod material: Diameter max. 350 mm but max. weight 200 kg

Other sizes on request.



Details to our certificates
at www.plansee.com



1.2 Coating

The film thickness is measured with eddy current testing directly after coating.

2 Physical and mechanical product properties

2.1 Microstructure base material

The annealing of the coating leads to a change in microstructure of the base material.

3 Chemical composition

The chemical composition of the SIBOR® coating will be defined by the used APS spraying powder.

Tab. 1: Chemical composition of the spraying powder

Main- and Side-components	Spec. value [Wt.%]	Max. content [Wt.%]	Min. content [Wt.%]
Si	The rest		
Bor	8,0	11,0	6,0
Carbon	1,5	2,0	1,0

4 Machining

Machining after coating is only possible in special cases, with the exception of thread machining at the ends or connections. Machined areas do not longer have oxidation protection.

5 Surface texture

In a visual inspection it is checked that there are no uncoated areas or any chipping of the coating. Stains may occasionally form on the surface, but this will not affect the oxidation protection properties. In all cases of doubt, a conductivity test is carried out.



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6 Packaging, labelling, storage and certification

6.1 Packaging, labelling and storage

Standard individual packing: wooden case with separation between SIBOR® coated parts

Special packings: Upon request, the parts can be packed one by one in PE-bags with addition of a drier agent

Each package will be provided with a label with the following information:

Producer's name:	Plansee
Plansee order number:	
Lot number:	
Material number:	
Material:	SIBOR® Coated Mo or MoZrO ₂
Dimension:	
Surface condition:	
Quantity:	Total quantity in pieces and/or kg
Date:	

The material must be kept in a dry place and protected from mechanical damage. It is best to keep the material in the original packing until used.

Special packing: (extra costs will be invoiced)

Special packing should be used if the material is stored under unusual conditions or aggressive atmosphere (e.g. sea air, ...).

6.2 Inspection documents

Following inspection documents will be supplied upon customer request according to EN 10 204:

Test report 2.2

Plansee confirms with this test report that the delivered product meets the specification and gives details of the material properties according to ongoing production surveillance, not directly related to the particular production batch.

Inspection certificate 3.1 (extra costs will be invoiced)

An inspection officer from Plansee confirms with this inspection certificate that the delivered product meets the specification and gives test results related to the particular production batch.



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7 Order instructions

Please quote following information when ordering:

- Product and material description
- Quality (the number of this specification must be mentioned)
- Dimensions of part
- In case thread size (should non-standard threads be required, a drawing with all relevant sizes should be made available)
- Quantity (number of electrodes or total weight in kg)
- Required certificate and content in case of a 3.1 inspection certificate
- *For special packing:* Specification of packaging

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

8 Referenced standards and other accompanying documents

The standards applied for the test methods are listed in the Plansee standard InfoBase and are made available upon request.

PSE-610-PS-104 Mo glass melting electrodes

PSE-610-PS-194 MoZrO₂ glass melting electrodes

Changes to last version:

New documented information



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