

1. General:

This product specification applies to optical and geometric properties of quartz glass rods of Raesch Quarz (Germany) GmbH.

2. Optical Characteristics:

Defects are just specified if they are detected with the unaided eye in front of a black or white background. The optical measuring instruments are scale magnifiers and caliper gauges.

2.1 Bubbles

There are three different types of bubbles:

- a) Enclosed bubbles are cavities $\geq 0.2\text{mm}$ completely surrounded by the wall and not tactile. A total bubble length of 40mm/kg is permitted. A closed bubble may not exceed 15 mm.
- b) Tactile bubbles are a raised area on the rod surface located directly above an enclosed cavity. Bubbles are tactile if they can be felt with a glove. Tactile bubbles are not permitted.
- c) Open bubbles are cavities which are open on the outer surface of the rod and have sharp edges. Open bubbles are not permitted.

2.2 Contaminations

Contaminations are substances adhering to the rod surface which can be removed with suitable cleaning agents. This kind of contaminations is permitted.

2.3 Scratches

Scratches are fine surface defects caused by material removal. They are only allowed if they are not palpable with a glove. The defected area may not exceed 2% of the rod surface.

2.4 Vapor

Vapor is defined as SiO_2 deposit on the surface visible to the unaided eye. Only white deposits are permitted.

2.5 Discolorations

Discolorations are visible color differences of the rod caused by the production process. These are permitted if the glass properties are not negatively affected.

2.6 Stripes

Stripes are classified into drawing lines and striations.

Drawing lines are visible, not tactile inhomogeneities in the glass. A slight stripe forming is accepted. Striations are tactile peaks or pits on the rod surface. These are allowed as their height or depth does not exceed 0.05mm.

2.7 Inclusions

Inclusions are foreign particles partially or completely enclosed in the rod. Foreign material with a size of up to 0.3mm is allowed. Foreign material with a size of up to 0.5mm is only allowed if there is not more than one inclusion on 300mm rod section.

3. Geometric Characteristics:

A rod is defined according to its outer diameter (OD) and its total length (L). The respective tolerances can be found in table 1.

The used measuring instruments are caliper gauges and dial gauges.

3.1 Ovality

Ovality defines the roundness of a rod and is calculated as follows:

ovality in % = (max OD – min OD) / nominal OD x 100%

3.2 Bow

Bow describes the maximum deviation from a horizontal measuring axis. It is measured centrally over a length of 1.000mm.

3.3 Length

Rods are available as FC (Furnace Cut) and TC (Trim Cut). FC rods have a tolerance of ± 10mm and TC rods of ±3mm.

Dimensional Characteristics:

OD [mm]	tolerance [%]	max ovality [%]	max bow [mm/m]
10-50	± 1.5	0.8	0.6

table 1

4. OH content:

The nominal OH content of rods does not exceed 35 ppm.

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Applicable documents:

Material Specifications
General specification for cutting

Revision History		
Rev.	date	Description of Change
0	01.06.2019	• new document