Sorts	OH – content	Stress birefringence	Bubbles and inclusions				Homogeneity			
	[ppm]	10% outer edge exclusion [nm/cm]	Bubbles according to bubble class DIN 58927	Max. Bubbles diameter [mm] glass weight [kg]	Max. area of bubbles in 100 cm³ of glass [1] [mm²]	Max. area of inclusions in 100 cm³ of glass [1] [mm²]	Striae in acc. to DIN 3140	Striations [2]	Refraction index change Δn with small gradients [4]	Special products
SQ0 (SQ_0E) [10]	**appr. 1200**	**≤ 10 [5]**	**0**	**0,1 ≤ 4kg** 0,2 > 4 kg	**≤ 0,03**	**0** **none**	**3D** **none**	**3D**	**≤ 2•10⁻⁵**	**≤1•10⁻⁶**
SQ1 (SQ_1E) [10]	appr. 1200	≤ 10 [5]	0	0,1 ≤ 4kg	≤ 0,03	0	none	slight [8]	≤ 2•10⁻⁵	≤1•10⁻⁶
SQ2	appr. 1200	≤ 15 [5][6]	0 / 1 [3]	0,2 > 4 kg 0,6 > 10kg	≤ 0,03/0,2 [3]	≤ 0,03/0,2 [3]	none	moderate [8]	≤ 3•10⁻⁵	
SILUX®	appr. 240	≤ 15	3	1	0,5	≤ 3,0	[9]		≤ 3•10⁻⁵	

1) bubbles resp. inclusions with a diameter of ø ≤ 0,06mm are not taken into consideration when singularly present.
2) shadow method and interferometer were used to detect striations.
3) valid for thermally reshaped material.
4) interferometer was used for Δn determination, whereby a margin area of 10% of diameter resp. edge length (max. 10mm) was not taken into consideration.
5) lower tolerances with respect to product size and processing available upon request.
6) not valid for drawn products.
7) border area up to 20% of diameter or edge lenght
8) perpendicular to functional direction.
9) Striae appear as granular structure, laminations and isolated local centres of an area up to several millimeters. Striae can be effective threedimensionally.
10) excimer laser grade (ArF and KrF), selected form SQ0 – SQ2;

Technical properties		SQ	Silux®
Mechanical data			
Density	[g/cm³]	2,20	2,20
Mohs-hardness		4,9……5,0	
Knoop-hardness	[N/mm²]	5800……6200	
Elasticity module	[GPa]	70	72,50
Shearing module	[GPa]	30	31
Poisson´s ratio		0,17	0,17
Compressive strength	[N/mm²]	1150	1150
Tensile strength	[N/mm²]	50	50
Bending stength	[N/mm²]	67	67
Thermal data			
Viscosity (dPa•s) and temperature			
for lgη = 14,5	(strain point)	970° C	1075° C
for lgη = 13,0	(annealing point)	1075° C	1180° C
for lgη = 10,0		1345° C	1455° C
for lgη = 7,6	(softening point)	1580° C	1730° C
Mean specific heat	[J/kg • K] 0…100° C	772	
Heat conductivity	W/m • K (20…100° C)	1,38 – 1,46	
Linar thermal expansion coeff.	[K⁻¹] 0…100° C	5,1 • 10-7	

Electrical and magnetical properties		SQ/Silux®
Specific electrical resistivity	**[Ω•m]**	
at T = 20° C		10^{20}
at T = 100° C		10^{18}
at T = 600° C		10^{12}
at T = 1000° C		10^{8}
Dielectric strength		
for a thickness of 3mm at T = 20° C	[kV/cm]	400
Dielectric loss angel		
in the range of 106 . . . 109 Hz	[tg δ]	0,0001
Dielectric constant at T = 20° C and 10^6 Hz		3,7

Chemical properties with regard to purity and typical amount of trace elements [ppm]

Trace elements	SQ0 / SQ1	SQ2	SILUX®
Al	0,05	0,20	30
Na*	0,05	0,50	2
Ca*	0,05	0,60	2
K*	0,05	0,20	1
Fe	0,005	0,20	1
Ti	0,05	0,08	1
Cu	0,005	0,10	0,10
Cr	0,005	0,05	0,02
Mn	0,005	0,10	0,10

* By reason of the measurements accuracy maximum values. Real measuring values are smaller (upon request).