

Spyrex™ - PMMA (acrylic) sheets

Typical Properties of

General Properties

	Test method	Units	value
Water absorption, 24 hrs	DIN 53495	%	0.30
Water absorption, 8 days	DIN 52495	%	0.50
Water absorption, max.	internal	%	1.75
Density	DIN 53479		1.19

Mechanical Properties

	Test method	Units	value
Poisson ration to 20°C			0.39
Tensile strength to 23°C	DIN 53455		
Stress at break		MPa	74
Modulus of elasticity		MPa	3300
Elongation at break		%	5
Flexural strength to 23°C	DIN 53452		
Stress at break		MPa	120
Stress at break		MPa	3000
Charpy impact strength- unnotched	DIN 53453	Kj/m ²	10
Izod impact strength -notched	ASTM D256 A	Kj/m ²	1.3
Hardness, Rockwell Scale M	ASTM D 785		90
Hardness, Shore Scale D	ASTM D 785		80
Compressive strength	DIN 53454	MPa	110
Shear strength – dynamic modulus	DIN 53445	MPa	1700

Optical Properties

	Test method	Units	value
Light transmittance	DIN 5036		
3mm thick		%	>92
5mm thick		%	>92
8mm thick		%	>92
Refractive index	DIN 53491		1.492

Electrial Properties

	Test method	Units	value
Dielectric strength	DIN 53481	KV/mm	20 to 25
Transverse resistivity	DIN 53482	Ohm.cm	> 10 15
Dielectric constant	DIN 53483		
To 50 Hz			3.7
To 1 MHz			2.6

Thermal Properties

	Test method	Units	value
Coefficient of linear expansion	DIN 52328	mm/m/°C	0.070
Thermal conductivity	DIN 52612	W/m/°C	0.19
Specific heat	ASTM C 351	J/g/°C	1.32
Insulation coefficient K	DIN 4701		
3 mm thick		W/m ² /°C	5.3
5 mm thick		W/m ² /°C	5.1
10 mm thick		W/m ² /°C	4.5
Vicat softening point B 10/10	DIN 53460	°C	>103
Heat distortion temperature	DIN 53461	°C	102
Max. Continuous service temperature		°C	80
Forming oven temperature		°C	140-170
Max. Heating temperature		°C	190
Max. Linear shrinkage after heating, thickness > 3 mm		%	3
Max. Linear shrinkage after heating, thickness < 3 mm		%	6
Max. Superficial temperature under infa-red		°C	210
Degradation onset temperature		°C	240

Flammability

	Test method	Units	value
Self-ignition temperature		°C	approx. 430
Flame resistance (Radiant heat source)			M4
Melt behaviour when burning			drips
Flame resistance	DIN 4102		B2
Flame resistance	BS 476 pt.7		class 4
Flame resistance	UL 94		HB
Oxygen Index	ASTM 286377	%	18
Chlorine content		%	0
Nitrogen content		%	<0.02