Physical properties of the extruded acrylic tubes "ESACRIL®"

Mechanical properties		Unit	Standard
density	1,18	g/cm³	DIN 53479
impact strength (standard small test specimen)	12	kJ/m²	DIN 53453
notched impact strength (standard small test specimen)	2	kJ/m²	DIN 53453
tensile strength (1/1 test specimen 3; V= 5 mm./min)	72	N/mm²	DIN 53455
elongation at break (1/1 test specimen 3; V= 5 mm./min)	4,5	%	DIN 53455
flexure strength (test specimen 80x10x4 mm.)	105	N/mm.²	DIN 53452
compressive yeald stress	103	N/mm²	DIN 53454
modulus of elasticity	3300	N/mm²	DIN 53457
dynamic shear modulus at c. 10 Hz	1700	N/mm.²	DIN 53445
indentation hardness brinell $H_{961/30}$	190	N/mm²	DIN 53456
Optical properties			
transmittance of 3mm. thick material in the visible range	≈ 92	%	DIN 5036
refractive index n_D^{20}	1,491		DIN 53491
Thermal properties			
coefficient of linear thermal expansion (0...50 °C)	$70\text{-}10^{-6}$	1/°C	VDE 0304/1
thermal conductivity	0,19	W/m °C	DIN 52612
U-Value at thickness of 3 mm. at thickness of 5 mm. at thickness of 10 mm.	5,6 5,3 4,4	W/m² °C	DIN 4701
forming temperature (oven temperature)	≈ 150	°C	
demoulding temperature	> 80	°C	
Maximum continuos service temperature	70	°C	
Vicat softening temperature method B	102	°C	DIN 53460
heat distortion temperature ISO 75, deflection 1,80 N/mm²	90	°C	DIN 53461
dimensional stability under heat acc. to Martens method	85	°C	DIN 53458
Electrical properties			
volume resistivity	$> 10^{15}$	OHM-cm	DIN 53482
surface resistance	$5\text{-}10^{13}$	OHM	DIN 53482
dielectric strength (test specimen thick 1 mm)	≈ 30	kV/mm	DIN 53481
dielectric constant at 50 Hz at 0,1 MHz	3,6 2,7		DIN 53483
dissipation factor at 50 Hz at 0,1 MHz	0,06 0,02		DIN 53483
tracking resistance	KC>600		DIN 53480
Behaviour towards water			
water absorption in weight gain after 24 hrs immersion	0,3	%	DIN 53495