



NATIONWIDE PLASTICS, INC.

The Authority on Plastics Manufacturing and Distribution



EXCELON™ PC

POLYCARBONATE TUBING

CLEAR, STRONG,

IMPACT RESISTANT

www.thermoplasticprocesses.com
www.excelon.com

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For the clarity of glass and the impact resistance of metal, specify Excelon™ PC tubing. Excelon PC provides extraordinary design and fabrication opportunities.

- Made from FDA-approved materials • UL rated • Clear as glass • High tensile strength over wide temperature range
- High impact strength — even at low temperatures • Excellent high temperature resistance • Flame-resistant • Self-extinguishing • Can be machined, drilled, cut and sawed • Easily joined with solvents or adhesives²

Excelon PC can be ordered from stock in 1/4" I.D. to 3 3/4" I.D., in 8 ft. lengths. Custom orders are also available in sizes up to 8" O.D. and in a variety of wall thicknesses. Specific formulations are available for tints and colors with performance additives for ultraviolet stabilization, flame retardant (94VO) and radiation resistance.

²Specifications available.

TYPICAL PROPERTIES

PROPERTY	ASTM Method	EXCELON PC				
Specific Gravity	D 792	1.20				
Refractive Index at 25°C	—	1.586				
Rockwell Hardness	D 785	Scale M 73-78 Scale R 112-125				
Abrasion resistance, Taber abraser with CS-17 wheel	D 1044	10 mg/1000 cycles				
Impact strength, notched Izod, 1/8" specimen, ft.-lb./in. of notch	D 256	15-17				
Impact strength, unnotched Izod, 1/8" specimen, ft.-lb./in.	D 256	>60				
Tensile-impact, ft.-lbs./in. ²	D 1822	250				
Tensile-yield strength, psi	D 638	7,000-9,000				
Tensile-ultimate strength, psi	D 638	9,000-11,500				
Tensile modulus, psi	D 638	300,000-345,000				
Elongation	D 638	100-130				
Compressive strength, psi	D 695	12,500				
Compressive modulus, psi	D 695	345,000				
Flexural strength, psi	D 790	12,000-12,700				
Flexural modulus, psi	D 695	320,000-350,000				
Shear-yield strength, psi	D 732	6,000				
Shear-ultimate strength, psi	D 732	10,000				
Light transmission (1/8-inch thick disc)	—	88-90%				
Water-vapor permeability cm ³ /STP/mm ² /sec./cm ² /cm HG	—	14.0 X 10 ¹³				
Modulus of rigidity, psi	—	116,000				
Deformation under load, 4,000 psi 77°F	D 621	0.2%				
158°F		0.3%				
Water absorption, 24 hour submersion equilibrium 73°F	D 570	0.15% 0.35%				
Heat-deflection temperature °F	D 648	264 psi: 275-285				
Thermal conductivity, cal./sec./cm ² /°C/cm	—	4.6 X 10 ⁻⁴				
Coefficient of linear-thermal expansion, in./in./°F -30°C to 30°C, in./in./°C	D 696	3.75 X 10 ⁻⁵ 6.6 X 10 ⁻⁵				
Flammability	D 635	Self-extinguishing				
Brittle temperature	D 746	< -215°C				
Dielectric constant		-30°C -3°C 23°C 100°C 125°C				
60 cycles	D 150	3.12 3.14 2.99 3.15 3.13				
10 ⁶ cycles	D 150		2.95			
Power factor						
60 cycles	D 150	0.005	0.0004	0.0009	0.0009	0.0011
10 ⁶ cycles				0.010		
Volume resistivity, ohm-cm	—	>10 ¹⁷	>10 ¹⁷	2.1 X 10 ¹⁶	2.1 X 10 ¹⁵	2.7 X 10 ¹⁴
Arc resistance, stainless-steel strip electrodes tungsten electrodes	D 495			10-12 sec 30 sec		
		25°C		100°C		
Dielectric strength, short time		400 v./mil at 125.0 mils		(The step-by-step values are essentially the same as the short time values for the 125-mil pieces)		

Data shown are average values and should not be used for specifications.

Excelon™...Clear Quality



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LIABILITY CLAUSE

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PC - 1/02

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