



APPLICATIONS:
SIGHT GLASS TUBING
LIGHTING DISPLAYS
CORE SAMPLING
PNEUMATIC TUBE SYSTEMS
PROTECTANT SLEEVES
LED TUBING
HIGH TEMPERATURE LINES

Samples available upon request.

Can be ordered from stock .375" to 6" OD in 8' lengths. Custom sizes, lengths, and colors available upon request.

Available in FDA formulations.

REGULATORY COMPLIANCE: REACH and RoHS compliant

Does not meet California Prop 65 compliance.

Polycarbonate Tubing Clear, Strong, Impact Resistant

- Clear as glass
- High tensile strength over wide temperature range
- High impact strength — even at low temperatures
- UV Stabilized
- Excellent high-temperature resistance
- Flame-resistant
- Self-extinguishing
- Can be machined, drilled, cut, and sawed
- Easily joined with solvents or adhesives

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

Excelon® PC can be ordered from stock in .375" to 6" OD, in 8' lengths. Custom orders are also available in sizes up to 10" OD and in a variety of wall thicknesses and lengths. Specific formulations are available for tints and colors with performance additives for radiation resistance and FDA applications.

PHYSICAL PROPERTIES

PROPERTIES	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		
.125" specimen	D 256	15-17 ft-lb/in of notch
IMPACT STRENGTH, UNNOTCHED IZOD		
.125" specimen	D 256	>60 ft-lb/in
Tensile-impact	D 1822	250 ft-lbs/in²
Tensile-yield Strength	D 638	7,000-9,000 psi
Tensile-ultimate Strength	D 638	9,000-11,500 psi
Tensile Modulus	D 638	300,000-345,000 psi
Elongation	D 638	100-130
Compressive Strength	D 695	12,500 psi
Compressive Modulus	D 695	345,000 psi
Flexural Strength	D 790	12,000-12,700 psi
Flexural Modulus	D 695	320,000-350,000 psi
Shear-yield Strength	D 732	6,000 psi
Shear-ultimate Strength	D 732	10,000 psi
Light Transmission (.125" thick disc)	—	88-90%
WATER-VAPOR PERMEABILITY		
cm³/STP/mm/sec/cm²/cm HG	—	14.0 x 10¹³
Modulus of Rigidity	—	116,000 psi
DEFORMATION UNDER LOAD		
77°F at 4,000 psi	D 621	.2%
158°F at 4,000 psi	D 621	.3%
WATER ABSORPTION, 24 HOUR		
Submersion	D 570	.15%
Equilibrium 73°F	—	.35%
Heat-deflection Temperature @ 264 psi	D 648	275-285°F
Thermal Conductivity (cal/sec/cm²/ °C/cm)	—	4.6 x 10⁻⁴
Coefficient of Linear-thermal Expansion (in/in/°F)	—	3.75 x 10⁻⁵
- 30°C to 30°C (in/in/°C)	D 696	6.6 x 10⁻⁵
Flammability	D 635	Self-extinguishing
Brittle Temperature	D 746	< -215°C



APPLICATIONS:

SIGHT GLASS TUBING
LIGHTING DISPLAYS CORE
SAMPLING PNEUMATIC
TUBE SYSTEMS
PROTECTANT SLEEVES

Samples available upon request.

Can be ordered from stock .375" to 6" OD in 8' lengths. Custom sizes, lengths, and colors available upon request.

Available in FDA formulations.

REGULATORY COMPLIANCE: REACH and RoHS compliant

Does not meet California Prop 65 compliance.

	ASTM METHOD	-30°C	-3°C	23°C	100°C	125°C
DIELECTRIC CONSTANT						
60 cycles	D 150	3.12	3.14	2.99	3.15	3.13
106 cycles	D 150	—	—	2.95	—	—
POWER FACTOR						
60 cycles	D 150	.005	.0004	.0009	.0009	.0011
106 cycles	—	—	—	.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	D 495	—	10-12 sec	—	—	—
Tungsten Electrodes	—	—	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)

Values listed are typical and are meant only as a guide to aid in design. Field testing should be performed to find the actual values for your application.

PC SIZING CHART

ITEM NO.	ID	OD	WALL	FT / CTN
5704	.250	.375	.062	1480
5706	.375	.500	.062	800
5708	.500	.625	.062	560
5710	.625	.750	.062	400
5712	.750	.875	.062	288
5713	.750	1	.125	240
5714	.875	1	.062	240
5716	1	1.125	.062	200
57163	1	1.250	.125	160
5718	1.125	1.250	.062	160
5720	1.250	1.500	.125	184
5722	1.375	1.500	.062	240
5724	1.500	1.750	.125	160
5726	1.625	1.750	.062	192
5728	1.750	2	.125	160
5730	1.875	2	.062	160
5732	2	2.250	.125	112
5733	2.125	2.250	.062	112
5734	2.250	2.500	.125	96
5735	2.375	2.500	.062	96
5736	2.500	2.750	.125	72
5737	2.625	2.750	.062	72
5738	2.750	3	.125	64
5739	2.875	3	.062	64
5748	3	3.125	.062	56
57483	3	3.250	.125	48
57543	3.250	3.500	.125	48
57603	3.750	4	.125	40
57923	5.750	6	.125	16



21649 Cedar Creek Ave
Georgetown, DE 19947
P: 302-855-0139
E: tpisales@excelon.com
www.thermoplasticprocesses.com

LIABILITY CLAUSE

TPI PARTNERS, INC., hereinafter called the "Manufacturer," warrants that its products shall be free from defects in workmanship and materials.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES FOR FITNESS FOR PURPOSE INTENDED. The Manufacturer's liability is limited to the replacement of any materials which, after an examination by the Manufacturer and its sole option, are found to be defective. The Manufacturer will honor only those claims which are presented within ninety (90) days of the delivery of the materials to the purchaser. THE MANUFACTURER SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY FOR CONSEQUENTIAL DAMAGES. This literature supersedes all previous literature and the responsibilities made thereon.