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## **PAR (YORKSHIRE) LTD**

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## **Polycarbonate Sheet, Rod & Tube**

Polycarbonate sheet, rod or tube is the transparent, dimensionally stable engineering plastic.

Polycarbonate is an amorphous engineering thermoplastic with high transparency and toughness for varied applications.

Polycarbonates main characteristics are that it is:

- Transparent (when machined and polished)
- Very tough
- Strong
- Good heat deformation
- Easily machined and polished, care required with coolant
- Easily welded
- Easily bonded
- Good electrical insulation

The preferred fields for the use of Polycarbonate are: mechanical engineering, model making, automotive engineering, transport and conveyor technology, electrical engineering, precision engineering, household appliances, food technology, medical technology, photo technology, and buildings

The most popular applications for polycarbonate are:

- Machine Guards
- Transparent working models
- Insulators
- Plug strips
- Masking covers
- Photo couplers
- Housing parts
- Plugs
- Sight glasses
- Optical components
- Weather protection parts



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### Technical Information

Information to be used as a guide only. It corresponds with our current knowledge and indicates possible applications. We cannot guarantee suitability for a specific application. Unless otherwise stated these values represent averages taken from injection moulded samples.

Properties	Unit	Test Method DIN ASTM	Result
<b>Mechanical</b>	-	-	-
Density	g/cm <sup>3</sup>	53479	1.20
Tensile strength at yield	MPa	53455	65
Tensile strength at break	MPa	53455	-
Elongation at Break	%	53455	60-100
Modulus of elasticity in tension	MPa	53457	2200
Modulus of elasticity in flexure	MPa	53457	-
Ball indentation hardness	MPa	53456	100
Impact strength (Charpy)	KJ/m <sup>2</sup>	53453	no break
Creep rupture strength after 1000 hours with static load	MPa	-	48
Time yield limit for 1% elongation after 1000 hours	MPa	-	18
Coefficient of friction against hardened and ground steel p+0,05 N/mm <sup>2</sup> , v=0,6 m/s	-	-	0.52 - 0.58
Wear conditions as above	µm/km	-	22
<b>Thermal</b>	-	-	-
Crystalline melting point	°C	53736	-
Glass transition temperature	°C	53736	145
Heat distortion temperature method A	°C	ISO 75	135
Heat distortion temperature method B	°C	ISO 75	140
Max. service temperature short term	°C	-	140
Max. service temperature long term	°C	-	120
Coefficient of thermal conductivity	W/(m K)	-	0.19
Specific heat	J/(g K)	-	1.2
Coefficient of thermal expansion	10 <sup>-5</sup> /K	-	6-7
<b>Electrical</b>	-	-	-
Dielectric constant at 10 (5) Hz	-	53483	3
Dielectric loss factor at 10(5) Hz	-	53483	0.006
Specific Volume Resistance	Ωcm	53482	10 (17)
Surface Resistance	Ω	53482	10 (15)
Dielectric strength 1mm	kV/mm	53481	27
Tracking resistance	-	53480	KA1
<b>Miscellaneous</b>	-	-	-
Moisture Absorption: Equilibrium in standard atmosphere (23°C / 50% relative humidity)	%	53714	0.2
Water absorption at saturation at 23°C	%	53495	0.36
Resistance to hot water, washing soda	-	-	not resistant
Flamability	-	UL 94	v2
Resistance to weathering	-	-	not resistant