

PC-ABS

PC-ABS blends polycarbonate and ABS to land in a useful middle ground: much of the strength and heat resistance of PC with the toughness and printability of ABS. We reach for it when a part needs to be tougher and take more heat than ABS, without the cost of full polycarbonate.

241 J/m

Notched Izod impact, XZ orientation (ASTM D256)

125 °C

Heat deflection at 66 psi (ASTM D648)

1.10

Specific gravity at 23 °C

About this material

PC-ABS is a blend of polycarbonate (PC) and acrylonitrile butadiene styrene (ABS). PC brings strength and heat resistance; ABS brings impact toughness and easy, stable printing. The standout is impact resistance, with notched Izod reaching 241 J/m in the strong orientation, several times what ABS provides. Heat deflection also climbs to 125 °C at 66 psi. Available in black and white.

Typical applications

Functional prototypes, manufacturing jigs and fixtures, enclosures and housings that must survive drops and warm environments, and low-volume production parts where toughness and heat resistance both matter.

Physical properties

PROPERTY	TYPICAL VALUE	TEST METHOD
Specific gravity	1.10 (at 23 °C)	ASTM D257
HDT at 66 psi	125.0 °C (257.1 °F)	ASTM D648 B
HDT at 264 psi	102.9 °C (217.2 °F)	ASTM D648 B
Glass transition (Tg)	105.3 °C (221.6 °F)	ASTM D7426
Mean CTE (50–95 °C)	72.96 µm/m·°C	ASTM E831
Volume resistivity	> 6.84e14 @m	ASTM D257

Tensile properties (ASTM D638), F900

PROPERTY	XZ ORIENTATION	ZX ORIENTATION
Yield strength [MPa]	36.5	No yield
Elongation at yield [%]	3.0	—
Strength at break [MPa]	34.7	25.9
Elongation at break [%]	4.7	1.8
Tensile modulus [GPa]	1.99	1.87

XZ (on-edge) runs the layers along the load and prints stronger. ZX (upright) stacks the layers across the load and often shows no yield. Typical values at 0.25 mm (0.010 in.) layer height.

Flexural, compression, and impact (F900)

PROPERTY	XZ ORIENTATION	ZX ORIENTATION
Flexural strength at break [MPa]	No break	46.2
Flexural strength at 5% strain [MPa]	61.9	—
Flexural modulus [GPa]	1.86	1.68
Compressive yield strength [MPa]	96.5	172
Izod impact, notched [J/m]	241	34.0
Izod impact, unnotched [J/m]	655	101

Flexural per ASTM D790, compression per ASTM D695, Izod impact per ASTM D256.

Source and notes

Values are drawn from the Stratasys PC-ABS material data sheet, document MDS_FDM_PC-ABS_0222a ([OEM source](#)). Stratasys lists these as typical values for reference and comparison, not for design specifications or quality control. Properties vary with orientation, layer height, and machine.

Full page: <https://www.evologymfg.com/manufacturing-capabilities/fdm-fused-deposition-modeling/pc-abs>