

Appendix C-18a Representative Mechanical Properties of Some Common Plastics

Plastic	Tensile Strength, S_u		Elongation in 2 in. (%)	Izod Impact Strength		Friction Coefficient	
	ksi	MPa		ft · lb	J	With Self	With Steel
ABS (general purpose)	6	41	5-20	6.5	8.8		
Acrylic (standard molding)	10.5	72	6	0.4	0.5		
Cellulosic (cellulose acetate)	2-7	14-48		1-7	1.4-9.5		
Epoxy (glass-filled)	10-20	69-138	4	2-30	2.7-41		
Fluorocarbon (PTFE)	3.4	23	300	3	4.1		0.05
Nylon (6/6)	12	83	60	1	1.4	0.04-0.13	
Phenolic (wood-flour-filled)	7	48	0.4-0.8	0.3	0.4		
Polycarbonate (general purpose)	9-10.5	62-72	110-125	12-16	16-22	0.52	0.39
Polyester (20 to 30 percent glass-filled)	16-23	110-90	1-3	1.0-1.9	1.4-2.6	0.12-0.22	0.12-0.13
Polypropylene (unmodified resin)	5	34	10-20	0.5-2.2	0.7-3.0		

Note: Values shown are typical; both higher and lower values may be commercially obtainable. Also see Appendix C-18b.

Sources: *Machine Design*, 1981 Materials Reference Issue, Penton/IPC, Cleveland, Vol. 53, No. 6 (March 19, 1981); *Materials Engineering*, 1981 Materials Selector Issue, Penton/IPC, Cleveland, Vol. 92, No. 6 (Dec. 1980).