

MODULI OF ELASTICITY AND POISSON'S RATIO

Material	Modulus of elasticity E		Shear modulus of elasticity G		Poisson's ratio ν
	ksi	GPa	ksi	GPa	
Aluminum alloys	10,000- 11,400	70-79	3,800-4,300	26-30	0.33
2014- T6	10,600	73	4,000	28	0.33
6061- T6	10,000	70	3,800	26	0.33
7075- T6	10,400	72	3,900	27	0.33
Brass	14,000-16,000	96-110	5,200-6,000	36-41	0.34
Bronze	14,000-17,000	96-120	5,200-6,300	36-44	0.34
Cast iron	12,000-25,000	83-170	4,600-10,000	32-69	0.2-0.3
Concrete (compression)	2,500-4,500	17-31			0.1-0.2
Copper and Copper alloys	16,000-18,000	110-120	5,800-6,800	40-47	0.33-0.36
Glass	7,000-12,000	48-83	2,700-5,100	19-35	0.17-0.27
Magnesium alloys	6,000-6,500	41-45	2,200-2,400	15-17	0.35
Nickel	30,000	210	11,400	80	0.31
Plastics					
Nylon	300-500	2.1-3.4			0.4
Polyethylene	100-200	0.7-1.4			0.4
Rock (Compression)					
Granite, marble, quartz	6,000-14,000	40-100			0.2-0.3
Limestone, sandstone	3,000-10,000	20-70			0.2-0.3
Rubber	0.1-0.6	0.0007-0.004	0.03-0.20	0.0002-0.001	0.45-0.50
Steel	28,000-30,000	190-210	10,800-11,800	75-80	0.27-0.30
Titanium alloys	15,000-17,000	100-120	5,600-6,400	39-44	0.33
Tungsten	50,000-55,000	340-380	21,000-23,000	140-160	0.2
Wood (bending)					
Douglas fir	1,600-1,900	11-13			
Oak	1,600-1,800	11-12			
Southern pine	1,600-2,000	11-14			

Reference : "Mechanics of Material" by James M. Gere, Stephen P. Timoshenko, 1997

