

Table of Material Properties

"G" = Modulus of Rigidity
 "E" = Modulus of Elasticity

"G" and "E" values may vary somewhat due to operating stress, heat treatment, and cold work.



COMMON NAME SPECIFICATION	SPECIFICATION	G 10° PSI	E 10° PSI	MAX SERVICE TEMP °F	ELECTRICAL CONDUCTIVITY % IACS	FATIGUE APPLICATIONS	RELATIVE STRENGTH	POISSIN'S RATIO	CORROSION RESISTANCE	MAGNETIC
High-Carbon Steel Wires										
	Music ASTM A228	11.5	30	250	7	excellent	high	.304	poor	yes
	Hard-Drawn ASTM A227	11.5	30	250	7	poor	medium	.304	poor	yes
	Oil Tempered ASTM A229	11.5	30	300	7	poor	medium	.304	poor	yes
Alloy-Steel Wire										
	Chrome Vanadium AISI 6150, ASTM A232	11.5	30	425	7	Excellent	High	.29	Fair	Yes
	Chrome Silicon AISI 9254, ASTM A401	11.5	30	475	5	Excellent	High	.29	Fair	Yes
Stainless Steel Wire										
	Austenitic AISI 301, AISI 302, ASTM A313	10	28	500	2	Good	Medium	.4	Good [†]	Yes
	Precipitation-hardening 17-7 PH	11	29.5	600	2	Good	High	.34	Good [†]	Yes
Brass		6	16	200	17	Poor	Low	.333	Good	No
Nickle Base Alloy Wire and Strip										
	Inconel 600	11	31	700	1.5	Fair	Low	.409	Good	Low
	Inchonel 718	11.2	29	1100	1.25	Fair	Low	.295	Good	Low
Copper Base Alloy Wires										
	Phosphor Bronze ASTM B159	6.3	15	200	18	Good	Medium	.19	Good	No
	Beryllium-copper ASTM B197	7	18.5	400	21	Excellent	High	.321	Good	No
High Carbon AISI 1075, AISI 1074		11.5	30	250	7	Good	High	.304	Poor	Yes
Copperbase Alloy Wires										
	Phosphor Bronze ASTM B159	6.3	15	200	18	Good	Medium	.19	Good	No
	Beryllium-copper ASTM B197	7	18.5	400	21	Excellent	High	.321	Good	No
High Carbon Steel Strip AISI 1075, AISI 1074		11.5	30	250	7	Good	High	.304	Poor	Yes
Stainless Steel Strip										
	Austenitic AISI 301, AISI 302, ASTM A313	10	28	600	2	Good	Medium	.4	Good [†]	Yes
	Precipitation-hardening 17-7 PH	11	29.5	700	2	Good	High	.34	Good [†]	Yes

All of the above materials possess weaknesses and strengths when exposed to different environments. Please research specific applications before choosing the proper material.

Material Manufacturer's recommended Maximum Service Temperature for Inconel 718 is 1100 °F, however our internal testing of this material when used in standard applications indicates loss of consistent spring behavior above 900 °F.

[†]Stainless Steel cannot be submerged for long periods of time in water, because its skin must absorb oxygen in order to resist corrosion.