

Material Chart

Material	Rotor Clip Products	Rotor Clip Material Code	Used For Standard and/or Custom Material	Common Environments For Use	DIN	UNS	Material Thickness (in)	Minimum Tensile Strength (psi)	Shear Strength (psi)	Maximum Operating Temp (°F)	Density (lbs/in ³)	Modulus of Elasticity (psi)
Carbon Steel												
Spring Temper	Retaining Rings, Spiral Rings, & Wave Springs	ST	Standard & Custom	Protected	1.1248 (ref)	G10700 - G10900	.006 - .014	269,000	153,000	250	0.284	30 x 10 ⁶
							.0141 - .021	255,000	145,000			
							.0211 - .043	221,000	126,000			
							.0431 +	211,000	120,000			
Hard Drawn	Retaining Rings, Spiral Rings, & Hose Clamps	ST	Standard & Custom	Protected	1.1231 (ref)	G10600 - G10750	.0201 - .030	230,000	130,000	250	0.284	30 x 10 ⁶
							.0901 - .110	181,000	103,000			
Stainless Steel												
302	Retaining Rings & Spiral Rings	SJ	Standard & Custom	Corrosive, Elevated Temp, & Cryogenic Temp	1.4300	S30200	.005 - .022	210,000	119,000	400	0.284	28 x 10 ⁶
							.0221 - .047	200,000	114,000			
							.0471 - .062	185,000	105,000			
							.0621 - .074	175,000	100,000			
							.0741 - .089	165,000	94,000			
							.0891 - .095	155,000	88,000			
316	Retaining Rings & Spiral Rings	SU	Custom	Corrosive, Elevated Temp, & Cryogenic Temp	1.4401	S31600	.002 - .023	195,000	111,000	400	0.289	28 x 10 ⁶
							.0231 - .048	190,000	108,000			
							.0481 - .061	175,000	99,000			
							.0611 +	170,000	97,000			
17-7PH Condition CH900	Wave Springs	SQ	Standard & Custom	Corrosive & Elevated Temp	1.4568	S17700	x	240,000	137,000	650	0.282	29.5 x 10 ⁶
Copper Alloys												
Beryllium Copper	Retaining Rings & Spiral Rings	BC	Standard & Custom	Corrosive, Cryogenic Temp, & Magnetic	2.1247	C17200	x	185,000	128,000	400	0.298	18.5 x 10 ⁶
Phosphor Bronze	Wave Springs	PB	Custom	Corrosive, Cryogenic Temp, & Non-Magnetic	x	C51000	x	x	x	Room Temp	0.320	16 x 10 ⁶
Exotic Alloys												
A-286	Wave Springs	SY	Custom	High-Temp & Non-Magnetic	1.4980	S66286	x	185,000	105,000	1000	0.286	31 x 10 ⁶
INCONEL X-750	All	IC	Custom	Corrosive, High-Temp, & Non-Magnetic	2.4669	N07750	x	220,000 (Spring Temper)	125,000 (Spring Temper)	700 (Spring Temper)	0.299	31 x 10 ⁶
								155,000 (High-Temp)	88,000 (High-Temp)	1200 (High-Temp)		
INCONEL 718	All	IN	Custom	High-Temp & Non-Magnetic	2.4668	N07718	x	180,000	102,000	1300	0.297	29.6 x 10 ⁶
ELGILOY	Wave Springs	EG	Custom	Corrosive & Non-Magnetic	2.4711	R300003	≤ .004	300,000	171,000	800	0.300	30 x 10 ⁶
							.00491 - .019	290,000	165,000			
							.0191 - .025	280,000	159,000			
							.0251 - .100	270,000	154,000			
Hastelloy	Wave Springs	HE	Custom	Corrosive & Non-Magnetic	2.4819	N10276	< .016	230,000	131,000	750	0.321	29.8 x 10 ⁶
							.0161 - .032	210,000	119,000			
							.0321 - .054	200,000	114,000			
							.0541 +	190,000	108,000			