

TYPE 302 STAINLESS STEEL WIRE

Type 302 stainless steel wire is a general purpose stainless alloy typically composed of 18% Chromium and 8% nickel. The balance of the chemistry is: carbon 15% maximum, manganese 2.00% maximum: and silicon 1.00% maximum. It is the most widely used stainless spring wire because of its high corrosion resistance properties and good tensile strength. For spring applications it is generally furnished in the cold drawn condition. Type 302 springs have good strength at moderate temperatures. If properly treated after forming they will set less than most other spring materials at temperatures up to 500°F. Type 302 is non-magnetic in the annealed condition, however material in the spring condition is slightly magnetic due to the transformation of some martensite in the drawing operation. The greater the amount of cold reduction the higher the degree of magnetism.

Gibbs Type 302 stainless steel wire is available in the size range .006" to .625". All wire conforms to ASTM-A-313 and AMS-5688.

Chemical Composition per ASTM-A-313								
Carbon	.12% max		Sulfur	.030% max		Molybdenum	0.75% max	
Manganese	2.00% max		Chromium	17.00 - 19.00 %		Copper	0.75% max	
Phosphorus	.045% max		Nickel	8.00 - 10.00 %				
Silicon	1.00% max		Nitrogen	.10% max				

Tensile Strength Table (ASTM-A-313) *KSI								
Over	To	Tensile *	Over	To	Tensile*	Over	To	Tensile*
.001	.008	325-355	.031	.034	282-310	.125	.136	217-248
.009	.010	320-350	.034	.037	280-308	.136	.148	210-241
.010	.011	318-348	.037	.041	275-304	.148	.162	205-235
.011	.012	316-346	.041	.045	272-300	.162	.177	198-228
.012	.013	314-344	.045	.050	267-295	.177	.192	194-225
.013	.014	312-342	.050	.054	265-293	.192	.207	188-220
.014	.015	310-340	.054	.058	261-289	.207	.225	182-214
.015	.016	308-338	.058	.063	258-285	.225	.250	175-205
.016	.017	306-336	.063	.070	252-281	.250	.278	168-198
.017	.018	304-334	.070	.075	250-278	.278	.306	161-192
.018	.020	300-330	.075	.080	246-275	.306	.331	155-186
.020	.022	296-328	.080	.087	242-271	.331	.362	150-180
.022	.024	292-322	.087	.095	238-268	.362	.394	145-175
.024	.026	291-320	.095	.105	232-262	.394	.438	140-170
.026	.028	289-318	.105	.115	227-257	.438	.500	135-165
.028	.031	285-315	.115	.125	222-253	.500	.625	130-160

The above charts are intended to provide general background information. You should also review the appropriate material specification. Please contact Gibbs if you have any questions.