

TYPE 302 STAINLESS STEEL WIRE – NICKEL COATED

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% maximum and silicon 1% 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, with tensile strengths as shown in the table below. The tensile strength for straightened and cut wire may be reduced by 10% from the figures shown on the table.

Nickel coated stainless steel wire was developed to have excellent lubrication to minimize friction during the coiling process. The consistent and uniform lubrications helps provide stable spring dimensions and less load variation during coiling. Nickel coated stainless wire eliminates the need for pickling and degreasing prior to heat treatment with no major color change expected after heat treatment, retaining its same bright and consistent finish. Gibbs Interwire Type 302 stainless steel wire conforms to ASTM-A-313.

Chemical Composition Per ASTM-A-313					
Carbon	.120%	Silicon	1.00%	Nickel	8.00 – 10.00%
Manganese	2.00%	Sulfur	.030%	Nitrogen	.10%
Phosphorus	.045%	Chromium	17.00 – 19.00%	Molybdenum*	.750%
Copper*	.750%				
*AMS 5688					

TENSILE STRENGTH TABLE (ASTM-A-313)

Diameter		Tensile KSI	Diameter		Tensile KSI	Diameter		Tensile KSI
Over	To		Over	To		Over	To	
.001	.008	325-355	.031	.034	282-310	.125	.136	217-248
.009	.010	320-350	.034	.037	280-308			
.010	.011	318-348	.037	.041	275-304			
.011	.012	316-346	.041	.045	272-300			
.012	.013	314-344	.045	.050	267-295			
.013	.014	312-342	.050	.054	265-293			
.014	.015	310-340	.054	.058	261-289			
.015	.016	308-338	.058	.063	258-285			
.016	.017	306-336	.063	.070	252-281			
.017	.018	304-334	.070	.075	250-278			
.018	.020	300-330	.075	.080	246-275			
.020	.022	296-328	.080	.087	242-271			
.022	.024	292-322	.087	.095	238-268			
.024	.026	291-320	.095	.105	232-262			
.026	.028	289-318	.105	.115	227-257			
.028	.031	285-315	.115	.125	222-253			

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

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