

Stainless steel wires for springs

ASADA CORPORATION

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Asada Corporation is a specialized trading company
for wires and strips such as steels, wires, piano wires,
hard drawn steel wires, stainless steel wires etc.

[1] NAS STAINLESS SPRING WIRE

1. Grade and Characteristic

Table 1-1 Grade and Characteristic

Type		Chemical composition %								
Grade	JIS	C	Si	Mn	P	S	Ni	Cr	Mo	Others
NAS 304	SUS 304	0.08 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	8.00~10.50	18.00~20.00	—	—
NAS 302	SUS 302	0.15 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	8.00~10.00	17.00~19.00	—	—
NAS 301H	SUS 301	0.15 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	6.00~8.00	16.00~18.00	—	—
NAS 316	SUS 316	0.08 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	10.00~14.00	16.00~18.00	2.00~3.00	—
NAS 631J1	SUS 631J1	0.09 max.	1.00 max.	1.00 max.	0.040 max.	0.030 max.	7.00~8.50	16.00~18.00	—	Al 0.75~1.50
NAS 304N	SUS 304N1	0.08 max.	1.00 max.	2.00 max.	0.045 max.	0.030 max.	8.00~10.50	18.00~20.00	—	N 0.16~0.25
NAS 310S	SUS 310S	0.08 max.	1.50 max.	2.00 max.	0.045 max.	0.030 max.	19.00~22.00	24.00~26.00	—	—
NAS 604PH	—	0.10~0.15	0.50 max.	0.90~1.50	0.040 max.	0.030 max.	15.50~17.50	20.50~22.50	5.80~6.80	Co 40.0 min. Fe remains
NAS 750 (INCONEL X-750)	NCF 750	0.08 max.	0.50 max.	1.00 max.	—	0.010 max.	70.00* min.	14.00~17.00	—	Nb+Ta 0.70~1.20 Al 0.40~1.00 Ti 2.25~2.75 Fe 5.00~9.00 Co 1.00 max.

Note : * contains Co

Type		Characteristic	Applicable classification (Finish symbol)
Grade	JIS		
NAS 304	SUS 304	Most universal grade. Equivalent to 18-8 austenite in composition. Provided with increased strength and weak magnetism by an intensive degree of wire drawing.	Bare wire (H UB, H EB, H NB, H MB)
NAS 302	SUS 302	Higher carbon content than SUS304 with high strength and tenacity, and excellent in resistance to fatigue.	Nickel coated wire (H UBNS, H NF, H NP, H MT)
NAS 301H	SUS 301	Lower Ni and Cr content than SUS 302 with high strength obtained by work hardening, and excellent in resistance to fatigue and yield.	Resin coated wire (H WX, H RC, H CN)
NAS 316	SUS 316	Increased corrosion resistance by molybdenum addition. Less cold work hardened than SUS304, and non-magnetic.	Straightened wire (bare wire)
NAS 631J1	SUS 631J1	Typical precipitation hardening grade. Provided with excellent spring characteristic by wire drawn and age hardening.	Bare wire (H UB, H EB, H NB)
NAS 304N	SUS 304N1	Nitrogen added to SUS304. Provided with strength equal to SUS304. Magnetism corresponds to that between SUS304 and SUS316.	Nickel coated wire (H UBNS, H NF)
NAS 310S	SUS 310S	Excellent grade in resistance to heat and oxidation by high nickel and chromium addition. Undesired as high strength for springs due to less cold work hardening.	Resin coated wire (H WX, H RC, H CN)
NAS 604PH	—	Cobalt based alloy, Applicable for springs due to provided with high corrosion resistance, increased strength and high elasticity.	*** Bare wire (H UB, H EB, H NB)
NAS 750 (INCONEL X-750)	NCF 750	Nickel based super alloy, excellent in high temperature strength and corrosion resistance.	

Note : *** heat resistant spring wire

2. Finish Symbol and Feature

(1) Finish Symbols

Wire Diameter mm	Spring wire for general use			NAS HERCULEE	NAS MIGHTEN WIRE		Straightened wire
	Nickel coated	Resin coated	No coated	Nickel coated	Nickel coated	No coated	No coated
0.080	H UB NS						
0.10							
0.18							
0.25							
0.40							
0.50							
0.70							
0.80							
1.00							
1.60							
2.00							
3.00							
5.00							
12.0							