SOMERS Thin Strip Stainless Steel Alloy Guide

Austenitic Stainless Steel															Ferritic Stainless Steel		Martensitic Stainless		PH Grade Steel
Alloy No	201	301L	301Si	301	301H	302	304	304L [6]	304H	305	316	316L [6]	321 [6]	347 [6]	409	430	410	420	PH17-7
ASTM	A666	A666		A666		A666	A666	A666	A240	A167	A666	A666	A167	A240	A176	A176	A167	A176	A693
MIL Spec. No.				S5059		S5059	S5059	S4043			S5059		S6721	S6721					S25043
AMS Spec. No.		5517 -5519	5517 -5519	5517 -5519	5517 -5519	5516	5513	5511	5513	5514	5524	5507	5510	5512		5503	5504	5506	5528
Ni min	4.0	6.15	6.4	7.0	7.5	8.0	8.0	8.0	9.25	12.0	10.0	10.0	9.0	9.0	.50 max	.75 max	.75 max	.50 max	6.5
Cr min	16	16	16	16	16	17	18	18	18	17	16	16	17	17		16	11.5	12	16
Mo max	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.8	0.75	0.75	3.0	3.0	0.75	0.75		0.50	0.50	0.50	
C max	0.15	0.15	0.15	0.15	0.15	0.15	0.08	0.03	0.08	0.12	0.08	0.03	0.08	0.08	0.08	0.12	0.15	0.4	0.09
Mn max	7.5	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1
Si max	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1
N max	0.25						0.10	0.10	0.10				0.10				0.08		
Physical Properties																			
Density (lbs. per cu. in.)	0.287	0.290	0.290	0.290	0.290	0.287	0.287	0.287	0.287	0.290	0.286	0.286	0.285	0.290	0.280	0.278	0.278	0.276	0.262
Mod. of Elasticity (X 106 psi)	28.6	28	28	28	28	28	28	28	28	28	28	28	28	28	29	29	29	29	29.5
Elec. Resistivity [1]	423	432	432	432	432	432	432	432	432	432	444	444	432	436	360	360	342	330	480
Therm. Conductivity [2]	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.3	9.3	9.3	9.2	---	13.1	14.4	14.4	9.5
Coef. of Therm. Expansion [3]	8.7	9.4	9.4	9.4	9.4	9.6	9.6	9.6	9.6	9.6	8.9	8.9	9.3	9.3	6	5.8	5.5	5.7	6.1
Cost Factor [4]	0.87			0.95		1	1	1.13		1.39	1.56	1.68	1.35	1.62	---	0.73	0.76	---	2.18
Tensile Strength (x 1000 psi)																			
Annealed	100-135	140-165	140-165	110-135	100-130	75-110	90-110	90-105	90-105	80-100	80-100	80-100	80-105	80-110	55 Min	65 Min	65-95	100 Max	150 Max
1/8 Hard	110-145			110-145	110-145	110-140	110-140	110-135	110-135	100-125	100-125	100-125				95-110			
1/4 Hard	125-150			125-150	125-150	125-150	125-150	125-150	125-150	125-150	125-150	125-150				110 Min			
1/2 Hard	150-175			150-175	150-175	150-175	150-175				150-175	150-175							
3/4 Hard	175-200			175-200	175-200	175-200	175-200												180 Min (3/4C)
Full Hard	185 Min	185 Min	185 Min	185 Min	185 Min	185 Min	185 Min				175 Min	175 Min					200 Min (HT) [5]	240 Min (HT) [5]	200 Min (CondC)
Spring	200-230	200 Min	200 Min	200-230		200 Min	200 Min												
SPL Spring		270 Min Note [7]	270 Min Note [7]																
Yield Strength (x 1000 psi @ 0.2% offset)																			
Annealed	40 Min	40 Min	40 Min	35 Min	35 Min	35 Min	35 Min	30 Min	35 Min	30 Min	30 Min	30 Min	30 Min	30 Min	30 Min	35 Min	30 Min	30 Min	40 Min
1/8 Hard	55 Min			55 Min	55 Min	55 Min	55 Min	55 Min	55 Min	55 Min	55 Min	55 Min				60 Min			
1/4 Hard	75 Min			75 Min	75 Min	80 Min	80 Min	75 Min	80 Min	75 Min	75 Min	75 Min				100 Min			
1/2 Hard	110 Min			100 Min	110 Min	120 Min	120 Min				110 Min	110 Min							
3/4 Hard	135 Min			135 Min	140 Min	135 Min	135 Min												130 Min (3/4C)
Full Hard	140 Min	140 Min	140 Min	140 Min	150 Min	145 Min	145 Min				140 Min	140 Min					170 Min (HT) [5]	190 Min (HT) [5]	140 Min (CondC)
Spring	160 Min	165 Min	165 Min	160 Min		160 Min	160 Min												
SPL Spring		Note [7]	Note [7]																
Elongation (% in 2 inches)																			
Annealed	40 Min	25 Min	25 Min	40 Min	40 Min	45 Min	45 Min	40 Min	45 Min	45 Min	40 Min	40 Min	40 Min	40 Min	20 Min	20 Min	20 Min	15 Min	20 Min
1/8 Hard	30 Min			35 Min	35 Min	35 Min	35 Min	35 Min	35 Min	25 Min	30 Min	30 Min				5 Min			
1/4 Hard	25 Min			25 Min	25 Min	15 Min	15 Min	15 Min	15 Min	10 Min	10 Min	10 Min				1 Min			
1/2 Hard	15 Min			15 Min	15 Min	5 Min	5 Min				5 Min	5 Min							
3/4 Hard	7 Min			10 Min	8 Min	3 Min	3 Min												4 Min (3/4C)
Full Hard	3 Min	5 Min	5 Min	8 Min	5 Min	3 Min	1 Min				1 Min	1 Min					3 Min (HT) [5]	3 Min (HT) [5]	1 Min (CondC)
Spring	1 Min	1 Min	1 Min	1 Min		1 Min	1 Min												
SPL Spring		Note [7]	Note [7]																

Note: The above data and information is presented for design purposes and is not necessarily intended for use as purchasing specifications.

1. OHMS/CIR. MIL FT.
2. BTU PER SQ. FT. PER FT. PER OF @ 68 OF.
3. INCHES PER INCH X 10-6 FROM 32OF - 212OF.
4. BASED ON ALLOY 304, BASE PRICE. NO EXTRAS FOR GAUGE, TEMPER, WIDTH, QUANTITY OR TOLERANCE INCLUDED."
5. TYPICAL HEAT TREATED PROPERTIES OF MARTENSITIC AND PH STAINLESS STEELS.
6. GENERALLY SOLD IN THE ANNEALED CONDITION ONLY.
7. SPECIAL ROLLED SPRING PROPERTIES AVAILABLE FOR THESE ALLOYS

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Olin

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