

ELEKTRISOLA

Stainless Steel 304 / 1.4301

General Description

ELEKTRISOLA stainless steel wire is suitable for several industrial applications. It is resistant against water, steam, low concentrated inorganic and organic acids. We also offer enamelling for steel wire in a wide variety of colors. Enamelled steel wire offers both electrical insulation, as well as a less aggressive surface than bare steel.

Features

- High tensile strength
- High corrosion resistance

Applications

- Screens / filters
- Medical devices
- Decoration / fabrics
- Jewelry
- Textiles

Electrical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
χ	Conductivity		1.37		S*m/mm ²
ρ	Resistivity		0.70		Ω *mm ² /m
	Resistance (IACS)		2.4		%

Mechanical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
σ_T	Tensile strength	800	950	1100	N/mm ²
ε	Elongation		30		%

Physical Characteristics (Note 1)

Symbol	Parameter	Min (Note 3)	Typ (Note 2)	Max (Note 3)	Units
ρ	Density		7.9		kg/dm ³

Note 1: Unless otherwise specified, all limits are guaranteed for annealed and enameled wire at TA = 20°C and measured according international standard IEC 851 as far as applicable.

Note 2: Typical Values represent the most likely parametric norm.

Note 3: All limits are evaluated by testing or statistical analysis but are not guaranteed.

BANNED SUBSTANCES COMPLIANCE

ELEKTRISOLA FEINDRAHT AG certifies that the products and packing materials meet the provision from the European Union for the Restriction of certain Hazardous Substances (RoHS) and the directive for Waste from Electrical and Electronic Equipment (WEEE).

Annex A

Electrical Resistance

The limits of electrical resistance are derived from the calculations made in IEC standard 317-0-1 Annex C.1 "Method for the calculation of linear resistance" for copper wire and are restricted by a factor of 2.

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0098	58	8709	9677	10645
0.0101		8200	9111	10022
0.0109	57	7040	7822	8605
0.0113		6551	7278	8006
0.0120		5809	6454	7099
0.0125	56	5353	5948	6543
0.0130	55.5	4949	5499	6049
0.0135	55	4589	5099	5609
0.0140		4268	4742	5216
0.0145	54.5	3978	4420	4862
0.0155	54	3482	3868	4255
0.0160		3267	3630	3993
0.0165	53.5	3072	3414	3755
0.0170		2894	3216	3537
0.0175	53	2731	3035	3338
0.0180		2582	2868	3155
0.0185	52.5	2444	2715	2987
0.0190		2317	2574	2832
0.0195	52	2200	2444	2689
0.0200		2091	2323	2556
0.0210	51.5	1897	2107	2318
0.0215		1809	2011	2212
0.0220	51	1728	1920	2112
0.0230	50.5	1581	1757	1933
0.0240		1452	1613	1775
0.0245	50	1393	1548	1703
0.0250		1338	1487	1636
0.0260	49.5	1237	1375	1512
0.0270		1147	1275	1402
0.0275	49	1106	1229	1352
0.0280		1067	1185	1304
0.0290	48.5	995	1105	1216
0.0300		929.4	1033	1136
0.0310	48	870.4	967.1	1064
0.0320		816.8	907.6	998
0.0330	47.5	770.6	853.4	936.2
0.0340		726.0	804.0	881.9
0.0350	47	685.1	758.7	832.3
0.0360		647.5	717.1	786.7
0.0370	46.5	613.0	678.9	744.7
0.0380		581.2	643.6	706.0
0.0381	46.1	578.1	640.2	702.3
0.0390	46.0	551.8	611.0	670.3
0.0400		524.5	580.9	637.2
0.0410	45.5	499.2	552.9	606.5
0.0420		475.7	526.9	578.0

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.0430		453.9	502.6	551.4
0.0437		439.5	486.7	533.9
0.0440	45	433.5	480.0	526.6
0.0450		414.4	458.9	503.5
0.0460		396.6	439.2	481.8
0.0470	44.5	382.9	420.7	458.6
0.0480		367.1	403.4	439.7
0.0490		352.2	387.1	421.9
0.0500	44	338.3	371.7	405.2
0.0520	43.5	312.8	343.7	374.6
0.0530		301.1	330.9	360.6
0.0550	43	279.6	307.2	334.9
0.0560		269.7	296.4	323.0
0.0580		251.4	276.3	301.1
0.0600	42.5	237.5	258.2	278.8
0.0620		222.4	241.8	261.1
0.0630	42	215.4	234.2	252.9
0.0650	41.5	199.3	220.0	243.8
0.0670		188.0	207.0	228.8
0.0680		182.8	201.0	221.8
0.0700	41	172.9	189.7	208.8
0.0710		168.3	184.4	202.7
0.0740		155.4	169.7	185.9
0.0750	40.5	151.5	165.2	180.8
0.0780	40	140.4	152.8	166.6
0.0800		133.8	145.2	158.1
0.0830	39.5	124.6	134.9	146.5
0.0850		119.0	128.6	139.4
0.0880	39	111.3	120.0	129.7
0.0900		106.5	114.7	123.8
0.0930	38.5	100.0	107.5	115.7
0.0950		95.94	103.0	110.7
0.1000		86.85	92.94	99.6
0.101	38.0	85.19	91.11	97.60
0.106	37.5	77.55	82.71	88.35
0.110		72.16	76.81	81.87
0.112		69.67	74.09	78.89
0.113	37	68.48	72.78	77.46
0.115		66.18	70.27	74.72
0.118	36.5	62.93	66.75	70.87
0.120		60.90	64.54	68.47
0.125		56.24	59.48	62.97
0.126	36	55.37	58.54	61.95
0.130		52.09	54.99	58.11
0.132		50.56	53.34	56.33
0.134	35.5	49.09	51.76	54.62

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Annex A

Electrical Resistance (Continued)

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.138		46.35	48.80	51.43
0.140		45.06	47.42	49.94
0.141	35	44.44	46.75	49.22
0.149	34.5	39.88	41.86	43.97
0.150		39.36	41.31	43.38
0.159	34.0	35.11	36.76	38.52
0.160		34.68	36.30	38.03
0.169	33.5	31.15	32.54	34.01
0.170		30.79	32.16	33.61
0.179	33	27.82	29.01	30.26
0.180		27.51	28.68	29.92
0.189		25.00	26.02	27.09
0.190	32.5	24.74	25.74	26.80
0.200		22.36	23.23	24.15
0.202	32	21.93	22.78	23.67
0.210		20.31	21.07	21.87
0.212	31.5	19.93	20.68	21.46
0.220		18.53	19.20	19.91
0.222		18.20	18.86	19.54
0.224		17.88	18.52	19.19
0.225	31	17.57	18.36	19.19
0.230		16.83	17.57	18.35
0.236		16.00	16.69	17.41
0.239		15.60	16.27	16.97
0.240	30.5	15.48	16.13	16.83
0.250		14.28	14.87	15.49
0.253	30	13.95	14.52	15.12
0.260		13.22	13.75	14.30
0.265		12.73	13.23	13.76
0.268	29.5	12.45	12.94	13.45

Nom. Diameter [mm]	AWG	Min [Ω/m]	Nominal [Ω/m]	Max [Ω/m]
0.270		12.27	12.75	13.25
0.280		11.42	11.85	12.30
0.286	29	10.96	11.36	11.79
0.290		10.66	11.05	11.46
0.295		10.31	10.68	11.07
0.300		9.97	10.33	10.70
0.301	28.5	9.905	10.26	10.63
0.315		9.055	9.366	9.691
0.319	28	8.832	9.133	9.446
0.335		8.018	8.281	8.555
0.339	27.5	7.832	8.087	8.352
0.345		7.565	7.808	8.061
0.350		7.353	7.587	7.829
0.355		7.149	7.375	7.608
0.360	27	6.916	7.171	7.438
0.375		6.381	6.609	6.847
0.380	26.5	6.216	6.436	6.665
0.383		6.121	6.336	6.560
0.390		5.906	6.110	6.324
0.400		5.618	5.809	6.007
0.402	26	5.563	5.751	5.947
0.420		5.101	5.269	5.442
0.425		4.983	5.145	5.314
0.427	25.5	4.937	5.097	5.263
0.450		4.451	4.589	4.733
0.453	25	4.393	4.529	4.670
0.475		3.999	4.119	4.243
0.481	24.5	3.901	4.017	4.137
0.500		3.613	3.717	3.825
0.508	24	3.488	3.601	3.719

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