COPPER WIRE CARD

Working Table, International Standard Annealed Copper

American Wire Gage (B. & S.)

ENGLISH UNITS

Gage No.	Diameter in Mils	Cross Section		Ohms per 1000 Feet		Pounds per 1000 Feet
		Circular Mils	Square Inches	25° C. (=77° F.)	65° C. (=149° F.)	
0000	460.	212 000.	0.166	0.0500	0.0577	641.
000	410.	168 000.	.132	.0630	.0727	508.
00	365.	133 000.	.105	.0795	.0917	403.
0	325.	106 000.	.0829	.100	.116	319.
1	289.	83 700.	.0657	.126	.146	253.
2	258.	66 400.	.0521	.159	.184	201.
3	229.	52 600.	.0413	.201	.232	159.
4	204.	41 700.	.0328	.253	.292	126.
5	182.	33 100.	.0260	.319	.369	100.
6	162.	26 300.	.0206	.403	.465	79.5
7	144.	20 800.	.0164	.508	.586	63.0
8	128.	16 500.	.0130	.641	.739	50.0
9	114.	13 100.	.0103	.808	.932	39.6
10	102.	10 400.	.003 15	1.02	1.18	31.4
11	91.	8230.	.006 47	1.28	1.48	24.9
12	81.	6530.	.005 13	1.62	1.87	19.8
13	72.	5130.	.004 07	2.04	2.36	15.7
14	64.	4110.	.003 23	2.58	2.97	12.4
15	57.	3260.	.002 56	3.25	3.75	9.86
16	51.	2580.	.002 03	4.09	4.73	7.82
17	45.	2050.	.001 61	5.16	5.96	6.20
18	40.	1620.	.001 28	6.51	7.51	4.92
19	36.	1290.	.001 01	8.21	9.48	3.90
20	32.	1020.	.000 802	10.4	11.9	3.09
21	28.5	810.	.000 636	13.1	15.1	2.45
22	25.3	642.	.000 505	16.5	19.0	1.94
23	22.6	509.	.000 400	20.8	24.0	1.54
24	20.1	404.	.000 317	26.2	30.2	1.22
25	17.9	320.	.000 252	33.0	38.1	0.970
26	15.9	254.	.000 200	41.6	48.0	.769
27	14.2	202.	.000 158	52.5	60.6	.610
28	12.6	160.	.000 126	66.2	76.4	.484
29	11.3	127.	.000 099 5	83.4	96.3	.384
30	10.0	101.	.000 078 9	105.	121.	.304
31	8.9	79.7	.000 062 6	133.	153.	.241
32	8.0	63.2	.000 049 6	167.	193.	.191
33	7.1	50.1	.000 039 4	211.	243.	.152
34	6.3	39.8	.000 031 2	266.	307.	.120
35	5.6	31.5	.000 024 8	335.	387.	.0954
36	5.0	25.0	.000 019 6	423.	488.	.0757
37	4.5	19.8	.000 015 6	533.	616.	.0600
38	4.0	15.7	.000 012 3	673.	776.	.0476
39	3.5	12.5	.000 009 8	848.	979.	.0377
40	3.1	9.9	.000 007 8	1070.	1230.	.0299

NOTE 1.—The table is based on the international standard of resistance for copper, which takes the fundamental mass resistivity = 0.15328 ohm (meter, gram) at 20° C., the corresponding temperature coefficient = 0.00393 at 20° C., and the density = 8.89 grams per cc. at 20° C. The temperature coefficient is proportional to the conductivity, whence the change of mass *resistivity* per degree C. is a constant, 0.000597 ohm (meter, gram).

NOTE 2.—The values given in the table are only for annealed copper of the standard resistivity. The user of the table must apply the proper correction for copper of any other resistivity. Hard-drawn copper may be taken as about 2.7 per cent higher resistivity than annealed copper.

NOTE 3.—Ohms per mile, or pounds per mile, may be obtained by multiplying the respective values above by 5.28.

NOTE 4.—For complete tables and other data see Circular No. 31 of the Bureau of Standards.

BUREAU OF STANDARDS, Washington, D. C., 1919.

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American Wire Gage (B. & S.)

METRIC UNITS

Gage No.	Diameter in mm	Cross Section in mm^2	Ohms per Kilometer		Kilograms per Kilometer
			25° C.	65° C.	
0000	11.7	107.	0.164	0.189	953.
000	10.4	85.0	.207	.239	756.
00	9.3	67.4	.261	.301	599.
0	8.3	53.5	.329	.379	475.
1	7.3	42.4	.415	.478	377.
2	6.5	33.6	.523	.603	299.
3	5.8	26.7	.659	.761	237.
4	5.2	21.2	.831	.959	188.
5	4.6	16.8	1.05	1.21	149.
6	4.1	13.3	1.32	1.53	118.
7	3.7	10.5	1.67	1.92	93.7
8	3.3	8.37	2.10	2.43	74.4
9	2.91	6.63	2.65	3.06	58.9
10	2.59	5.26	3.34	3.86	46.8
11	2.30	4.17	4.21	4.86	37.1
12	2.05	3.31	5.31	6.13	29.4
13	1.83	2.62	6.70	7.73	23.3
14	1.63	2.08	8.45	9.75	18.5
15	1.45	1.65	10.7	12.3	14.7
16	1.29	1.31	13.4	15.5	11.6
17	1.15	1.04	16.9	19.6	9.23
18	1.02	0.823	21.4	24.7	7.32
19	0.91	.653	26.9	31.1	5.80
20	.81	.518	34.0	39.2	4.60
21	.72	.411	42.8	49.4	3.65
22	.64	.326	54.0	62.3	2.89
23	.57	.258	68.1	78.6	2.30
24	.51	.205	85.9	99.1	1.82
25	.45	.162	108.	125.	1.44
26	.40	.129	137.	158.	1.14
27	.36	.102	172.	199.	0.908
28	.32	.0810	217.	251.	.720
29	.29	.0642	274.	316.	.571
30	.25	.0509	345.	398.	.453
31	.227	.0404	435.	502.	.359
32	.202	.0320	549.	634.	.285
33	.180	.0254	692.	799.	.226
34	.160	.0201	873.	1010.	.179
35	.143	.0160	1100.	1270.	.142
36	.127	.0127	1390.	1600.	.113
37	.113	.0100	1750.	2020.	.0893
38	.101	.0080	2210.	2550.	.0708
39	.090	.0063	2780.	3210.	.0562
40	.080	.0050	3510.	4050.	.0445