

## CABLE TESTING — GENERAL RESISTANCE OF CABLE CONDUCTORS

### 1. GENERAL

**1.001** This addendum supplements Section 634-020-012, Issue 2.

**1.002** Whenever this addendum is reissued the reason(s) for reissue will be provided in this paragraph.

**1.003** The addendum is issued in order to provide a Feet Per Ohm Table for various gauges of cable conductors at temperatures ranging from -10° F. to +120° F.

**1.004** This addendum also converts contents from handbook size to letter size.

### 2. RESISTANCE TABLE

The following change applies to Part 2 of the section:

(a) 2.02 — revised

**2.02** It has been found that the maximum range in the temperature of underground cables is

about 40° to 50° F. The temperature of aerial cable and open wire on the other hand follow closely the temperature of the atmosphere except where the cable or wire is exposed to the sun. In the latter case, cable and wire temperatures over 120° F. have been recorded.

For temperatures above 68° F.

$$Ft = Fa [1 - .00218 (t - 68)]$$

For temperatures below 68° F.

$$Ft = Fa [1 + .00218 (68 - t)]$$

Where

Ft = feet-per-ohm at temperature t,  
Fahrenheit.

Fa = feet-per-ohm at 68° F.

The resistance of the various gauges of conductors found in telephone cables at temperatures ranging from -10° F. to +120° F. is given in the following table:

**FEET PER OHM TABLE**

**GAUGE OF CONDUCTOR**

Temp.	28	26	24	22	19	16	13	10
-10	17.64	28.08	45.09	72.25	145.37	294.18	577.37	1154.74
-5	17.48	27.82	44.67	71.58	144.01	291.44	571.99	1143.98
0	17.32	27.56	44.25	70.92	142.66	288.70	566.62	1133.22
5	17.15	27.30	43.83	70.23	141.30	285.96	561.23	1122.46
10	16.99	27.04	43.41	69.56	139.95	283.12	555.85	1111.71
15	16.82	26.77	42.99	68.89	138.60	280.48	550.47	1100.95
20	16.66	26.51	42.57	68.21	137.24	277.74	545.10	1090.19
25	16.49	26.25	42.15	67.54	135.89	275.01	539.72	1079.43
30	16.33	25.99	41.72	66.87	134.53	272.26	534.33	1068.58
35	16.17	25.73	41.31	66.19	133.18	269.52	528.96	1057.92
40	16.00	25.47	40.89	65.52	131.82	266.78	523.58	1047.16
45	15.84	25.20	40.47	64.85	130.47	264.04	518.20	1036.39
50	15.67	24.94	40.05	64.17	129.12	261.30	512.82	1025.65
55	15.51	24.68	39.63	63.50	127.76	258.56	507.45	1014.87

**NOTICE**

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FEET PER OHM TABLE (Continued)

GAUGE OF CONDUCTOR

Temp.	28	26	24	22	19	16	13	10
60	15.34	24.42	39.21	62.83	126.41	254.82	502.07	1004.13
65	15.18	24.16	38.79	62.15	125.05	253.07	496.69	993.37
68	15.08	24.00	38.54	61.72	124.24	251.43	493.46	986.92
70	15.01	23.90	38.37	61.48	123.70	250.33	491.31	982.62
75	14.85	23.63	37.95	60.81	122.34	247.59	485.93	971.86
80	14.69	23.37	37.53	60.14	120.99	244.85	480.55	961.10
85	14.52	23.11	37.11	59.46	119.64	242.11	474.17	951.35
90	14.36	22.85	36.69	58.79	118.28	239.37	469.79	939.59
95	14.19	22.59	36.27	58.12	116.93	236.63	464.42	928.83
100	14.03	22.33	35.85	57.44	115.57	233.89	459.04	917.07
105	13.80	22.06	35.43	56.77	114.22	231.15	453.66	907.32
110	13.70	21.80	35.01	56.10	112.87	228.41	448.28	896.56
115	13.54	21.53	34.59	55.42	111.51	225.67	442.90	885.79
120	13.37	21.28	34.17	54.75	110.16	222.93	437.52	875.04