

TABLE V.—PAPER-INSULATED AND LEAD-COVERED CABLES: CURRENT-CARRYING CAPACITY AND CORRESPONDING FALL IN PRESSURE.

(Standard Annealed Copper.)

Number and Diameter (Inches) of Wires comprising Conductor.*	Nominal Area.	Maximum Current permissible (subject to Voltage-drop).				Approximate Total Length in Circuit (Lead and Return) for 1-volt drop with Maximum permissible Current (Col. 4).
		One Single Cable.	Two Single Cables.	One Concentric or Twin Cable.	One Three-core Cable.	
1.	2.	3.	4.	5.	6.	7.
	Sq. in.	Amps.	Amps.	Amps.	Amps.	Ft.
1/.036	0.001	5	4.1	4.1	4.1	30
1/.044	0.0015	7	6.1	6.1	6.1	30
3/.029	0.002	9	7.8	7.8	7.8	30
3/.036	0.003	13	12.0	12.0	12.0	29
1/.064	0.003	14	12.9	12.9	12.9	29
7/.029	0.0045	20	18.2	18.0	18.0	28
7/.036	0.007	31	28.0	25.0	23.0	27
7/.044	0.01	47	42.0	35.0	31.5	27
7/.052	0.0145	63	57.0	45.0	41.0	28
7/.064	0.0225	83	75.0	60.0	56.0	32
19/.044	0.03	97	87.0	71.0	66.0	35
19/.052	0.04	116	104.0	85.0	78.0	41
19/.064	0.06	150	135.0	114.0	101.0	48
19/.072	0.075	174	157.0	130.0	117.0	52
19/.083	0.1	212	191.0	157.0	142.0	57
37/.064	0.12	233	210.0	174.0	161.0	60
37/.072	0.15	273	246.0	200.0	186.0	65
37/.083	0.2	329	296.0	242.0	227.0	72
37/.093	0.25	381	343.0	280.0	265.0	78
37/.103	0.3	428	385.0	322.0	304.0	85
61/.093	0.4	516	464.0	394.0	—	95
61/.103	0.5	600	540.0	457.0	—	100
91/.093	0.6	693	624.0	—	—	105
91/.103	0.75	820	738.0	—	—	109
127/.093	0.85	905	815.0	—	—	116
127/.103	1.0	1,035	932.0	—	—	121

* The current-carrying capacity of a conductor having wires of a number or diameter not specified in this table shall be taken to be proportionate to that of the cases specified.

(i) Cables laid together. Multiply amps. for one cable by
 3 0.85
 4 0.80

(ii) Where cable is laid Multiply amps. in above columns by
 (a) Cleated to a wall 0.9
 (b) On the solid system 1.1
 (c) Direct in dry earth 1.2
 (d) Direct in wet earth 1.3
 (e) Direct under water 1.5

(iii) The figures given in the table apply to one single cable, two single cables, and to concentric, twin, and three-core cables run singly.

(iv) The maximum permissible currents (subject to voltage-drop) for the various sizes of conductors up to 1 sq. in. in cross-sectional area are shown in columns 3, 4, 5, and 6 of the table, which allows for a rise in temperature of 50° F. for impregnated-paper cables. For sizes below 0.0145 sq. in. the table is based on a current density of 4,000 amperes per square inch.

(v) The table refers to situations where the temperature of the air does not exceed 80° F., and thus the normal maximum running temperature is 130° F. Impregnated-paper lead-covered cables for pressures not exceeding 660 volts should not be allowed to attain a permanent temperature higher than 176° F., and the figures therefore allow of a margin of 46° F.

(vi) Where the temperature of the air exceeds 80° F. the permissible current shall be reduced in accordance with the following reduction factors:—

Initial Air Temperature. Degrees F.	Amperes permissible to be multiplied by
90	0.93
100	0.85
110	0.76
120	0.65
130	0.54

(vii) The further limitation of the size of conductor by the permissible drop in voltage is dealt with in Regulation 43-21 hereof.