Wire and Conduit Tables (Continued) — Based on 1962 N.E.C.

## TABLES 310-12, 310-14 ALLOWABLE CURRENT-CARRYING CAPACITIES OF INSULATED COPPER (Cu.) AND ALUMINUM (Al.) CONDUCTORS IN AMPERES — Not more than three conductors in raceway or cable or direct burial — Based on room temperature of 30°C., 86°F.

| Wire Size AWG or MCM | Rubber Type R Type RW; Type RU, Type RUW, (14-2); Type RH-RW (See Note 9 below); Thermo-plastic Type T, TW | | Rubber Type R, RW, RU, RUW (12-2) | Rubber Type RH; RUH (14-2); Type RH-RW (See Note 9 below); Type RHW Thermo-plastic Type THW; THWN | | Paper; Thermo-plastic Asbestos Type TA; Thermo-plastic Type TBS; Silicone Type SA; Var-Cam Type V; Asbestos Var-Cam Type AVB; MI Cable ❶ RHH | | Asbestos Var-Cam Type AVA Type AVL | | Impregnated Asbestos Type AI (14-8) Type AIA | | Asbestos Type A (14-8) Type AA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cu. | ❷ Al. | | Cu. | ❷ Al. | Cu. | ❷ Al. | Cu. | Al. | Cu. | Al. | Cu. | Al. |
| 14 | 15 | --- | | 15 | --- | 25 | --- | 30 | --- | 30 | --- | 30 | --- |
| 12 | 20 | 15 | | 20 | 15 | 30 | 25 | 35 | 25 | 40 | 30 | 40 | 30 |
| 10 | 30 | 25 | | 30 | 25 | 40 | 30 | 45 | 35 | 50 | 40 | 55 | 45 |
| 8 | 40 | 30 | | 45 | 40 | 50 | 40 | 60 | 45 | 65 | 50 | 70 | 55 |
| 6 | 55 | 40 | | 65 | 50 | 70 | 55 | 80 | 60 | 85 | 65 | 95 | 75 |
| 4 | 70 | 55 | | 85 | 65 | 90 | 70 | 105 | 80 | 115 | 90 | 120 | 95 |
| 3 | 80 | 65 | | 100 | 75 | 105 | 80 | 120 | 95 | 130 | 100 | 145 | 115 |
| 2 | 95 | 75 | | 115 | 90 | 120 | 95 | 135 | 105 | 145 | 115 | 165 | 130 |
| 1 | 110 | 85 | | 130 | 100 | 140 | 110 | 160 | 125 | 170 | 135 | 190 | 150 |
| 0 | 125 | 100 | | 150 | 120 | 155 | 125 | 190 | 150 | 200 | 160 | 225 | 180 |
| 00 | 145 | 115 | | 175 | 135 | 185 | 145 | 215 | 170 | 230 | 180 | 250 | 200 |
| 000 | 165 | 130 | | 200 | 155 | 210 | 165 | 245 | 195 | 265 | 210 | 285 | 225 |
| 0000 | 195 | 155 | | 230 | 180 | 235 | 185 | 275 | 215 | 310 | 245 | 340 | 270 |
| 250 | 215 | 170 | | 255 | 205 | 270 | 215 | 315 | 250 | 335 | 270 | --- | --- |
| 300 | 240 | 190 | | 285 | 230 | 300 | 240 | 345 | 275 | 380 | 305 | --- | --- |
| 350 | 260 | 210 | | 310 | 250 | 325 | 260 | 390 | 310 | 420 | 335 | --- | --- |
| 400 | 280 | 225 | | 335 | 270 | 360 | 290 | 420 | 335 | 450 | 360 | --- | --- |
| 500 | 320 | 260 | | 380 | 310 | 405 | 330 | 470 | 380 | 500 | 405 | --- | --- |
| 600 | 355 | 285 | | 420 | 340 | 455 | 370 | 525 | 425 | 545 | 440 | --- | --- |
| 700 | 385 | 310 | | 460 | 375 | 490 | 395 | 560 | 455 | 600 | 485 | --- | --- |
| 750 | 400 | 320 | | 475 | 385 | 500 | 405 | 580 | 470 | 620 | 500 | --- | --- |
| 800 | 410 | 330 | | 490 | 395 | 515 | 415 | 600 | 485 | 640 | 520 | --- | --- |
| 900 | 435 | 355 | | 520 | 425 | 555 | 455 | --- | --- | --- | --- | --- | --- |
| 1000 | 455 | 375 | | 545 | 445 | 585 | 480 | 680 | 560 | 730 | 600 | --- | --- |
| 1250 | 495 | 405 | | 590 | 485 | 645 | 530 | --- | --- | --- | --- | --- | --- |
| 1500 | 520 | 435 | | 625 | 520 | 700 | 580 | 785 | 650 | --- | --- | --- | --- |
| 1750 | 545 | 455 | | 650 | 545 | 735 | 615 | --- | --- | --- | --- | --- | --- |
| 2000 | 560 | 470 | | 665 | 560 | 775 | 650 | 840 | 705 | --- | --- | --- | --- |
| C. | F. | CORRECTION FACTORS, ROOM TEMPERATURES OVER 30°C. or 86°F. | | | | | | | | | | | |
| 40 | 104 | .82 | | .88 | | .90 | | .94 | | .95 | | --- | |
| 45 | 113 | .71 | | .82 | | .85 | | .90 | | .92 | | --- | |
| 50 | 122 | .58 | | .75 | | .80 | | .87 | | .89 | | --- | |
| 55 | 131 | .41 | | .67 | | .74 | | .83 | | .86 | | --- | |
| 60 | 140 | --- | | .58 | | .67 | | .79 | | .83 | | .91 | |
| 70 | 158 | --- | | .35 | | .52 | | .71 | | .76 | | .87 | |
| 75 | 167 | --- | | --- | | .43 | | .66 | | .72 | | .86 | |
| 80 | 176 | --- | | --- | | .30 | | .61 | | .69 | | .84 | |
| 90 | 194 | --- | | --- | | --- | | .50 | | .61 | | .80 | |
| 100 | 212 | --- | | --- | | --- | | --- | | .51 | | .77 | |
| 120 | 248 | --- | | --- | | --- | | --- | | --- | | .69 | |
| 140 | 284 | --- | | --- | | --- | | --- | | --- | | .59 | |

❶ For AWG sizes 12, 10 and 8 use capacities listed for Type RH.

❷ For 3 wire, single phase service and sub-service circuits capacities of conductors RH, RH-RW, RHH, RHW and THW shall be: #2-100A., #1-110A., #0-125A., #00-150A., #000-170A. and #0000-200A.

## APPROXIMATE VOLTAGE DROP
(Copper Conductor)

| Wire Size AWG or MCM | Per Ampere Per 100 feet — 80% Power factor | |
|---|---|---|
| | Single Phase | Three Phase |
| 14 | .4762 | .4167 |
| 12 | .3125 | .2632 |
| 10 | .1961 | .1677 |
| 8 | .1250 | .1087 |
| 6 | .0833 | .0714 |
| 4 | .0538 | .0463 |
| 3 | .0431 | .0379 |
| 2 | .0370 | .0323 |
| 1 | .0323 | .0278 |
| 0 | .0269 | .0231 |
| 00 | .0222 | .0196 |
| 000 | .0190 | .0163 |
| 0000 | .0161 | .0139 |
| 250 | .0147 | .0128 |
| 300 | .0131 | .0114 |
| 350 | .0121 | .0106 |
| 400 | .0115 | .0091 |
| 500 | .0101 | .0088 |
| 600 | .0094 | .0082 |
| 700 | .0089 | .0077 |
| 750 | .0086 | .0075 |
| 800 | .0085 | .0074 |
| 900 | .0081 | .0071 |
| 1000 | .0079 | .0069 |

## NOTES TO TABLES 310-12, 310-14

**8. More Than Three Conductors in a Raceway or Cable.** Tables 310-12 and 310-14 give the allowable current-carrying capacities for not more than three conductors in a raceway or cable. Where the number of conductors in a raceway or cable exceeds three, the allowable current-carrying capacity of each conductor shall be reduced as shown in the following Table:

| Number of Conductors | Per Cent of Values in Tables 310-12 and 310-14 |
|---|---|
| 4 to 6 | 80 |
| 7 to 24 | 70 |
| 25 to 42 | 60 |
| 43 and above | 50 |

*Exception — When conductors of different systems, as provided in Section 300-3, are installed in a common raceway the derating factors shown above apply to the number of Power and Lighting (Articles 210, 215, 220 and 230) conductors only.*

*Where single conductor or multi-conductors cables are stacked or bundled without maintaining spacing and are not installed in raceways, the individual current-carrying capacity of each conductor shall be reduced as shown in the above table.*

**9.** Where Type RH-RW rubber insulated wire is used in wet locations the allowable current-carrying capacities shall be that listed in columns 2 or 3.

Where used in dry locations the allowable current-carrying capacities shall be that listed in columns 4 or 5.

**10. Overcurrent Protection.** Where the standard ratings and setting of overcurrent devices do not correspond with the ratings and settings allowed for conductors, the next higher standard rating and setting may be used.

*Except as limited in Section 240-5.*

**11. Neutral Conductor.** A neutral conductor which carries only the unbalanced current from other conductors, as in the case of normally balanced circuits of three or more conductors, shall not be counted in determining current-carrying capacities as provided for in Note 8.

In a 3-wire circuit consisting of two phase wires and the neutral of a 4-wire, 3-phase WYE connected system, a common conductor carries approximately the same current as the other conductors and is not therefore considered as a neutral conductor.

**12. Voltage Drop.** The allowable current-carrying capacities in Tables 310-12 and 310-14 are based on temperature alone and do not take voltage drop into consideration. (See table above — right.)

**14. Aluminum Sheathed Cable.** The current-carrying capacities of Type ALS cable are determined by the temperature limitation of the insulated conductors incorporated within the cable. Hence the current-carrying capacities of aluminum sheathed cable may be determined from the columns in Tables 310-12 and 310-14 applicable to the type of insulated conductors employed within the cable.