(2) Selection of Ampacity. Where more than one calculated or tabulated ampacity could apply for a given circuit length, the lowest value shall be used.

Exception: Where different ampacities apply to portions of a circuit, the higher ampacity shall be permitted to be used if the total portion(s) of the circuit with the lower ampacity does not exceed the lesser of 3.0 m (10 ft) or 10 percent of the total circuit.

Informational Note: See 110.40 for conductor temperature limitations due to termination provisions.

(B) Engineering Supervision. Under engineering supervision, conductor ampacities shall be permitted to be calculated by using the following general equation:

$$I = \sqrt{\frac{T_c - (T_a + \Delta T_d)}{R_{dc}(1 + Y_c)R_{ca}}} \times 10^3 \text{ amperes} \quad \textbf{[315.60(B)]}$$

where:

T_c = conductor temperature (°C)
T_a = ambient temperature (°C)
ΔT_d = dielectric loss temperature rise
R_{dc} = dc resistance of conductor at temperature, T_c
Y_c = component ac resistance resulting from skin effect and proximity effect
R_{ca} = effective thermal resistance between conductor and surrounding ambient

Informational Note: The dielectric loss temperature rise (ΔT_d) is negligible for single circuit extruded dielectric cables rated below 46 kV.

Δ **(C) Tables.** Ampacities for conductors rated 2001 volts to 35,000 volts shall be as specified in Table 315.60(C)(1) through Table 315.60(C)(20). Ampacities for ambient temperatures other than those specified in the ampacity tables shall be corrected in accordance with 315.60(D)(4).

Informational Note No. 1: See IEEE 835, *Standard Power Cable Ampacity Tables*, and the references therein for availability of all factors and constants for ampacities calculated in accordance with 315.60(A).

Informational Note No. 2: See 210.19, Informational Note, for voltage drop on branch circuits that this section does not take into consideration. See 215.2(A)(2), Informational Note No. 2, for voltage drop on feeders that this section does not take into consideration.

Δ ***TABLE 315.60(C)(1)*** *Ampacities of Insulated Single Copper Conductor Cables Triplexed in Air*

	Temperature Rating of Conductor			
	2001–5000 Volts Ampacity		5001–35,000 Volts Ampacity	
Conductor Size (AWG or kcmil)	90°C (194°F) Type MV-90	105°C (221°F) Type MV-105	90°C (194°F) Type MV-90	105°C (221°F) Type MV-105
8	65	74	—	—
6	90	99	100	110
4	120	130	130	140
2	160	175	170	195
1	185	205	195	225
1/0	215	240	225	255
2/0	250	275	260	295
3/0	290	320	300	340
4/0	335	375	345	390
250	375	415	380	430
350	465	515	470	525
500	580	645	580	650
750	750	835	730	820
1000	880	980	850	950

Note: Refer to 315.60(E) for the basis of ampacities, 315.10(A) for conductor maximum operating temperature and application, and 315.60(D)(4) for the ampacity correction factors where the ambient air temperature is other than 40°C (104°F).

Δ ***TABLE 315.60(C)(2)*** *Ampacities of Insulated Single Aluminum Conductor Cables Triplexed in Air*

	Temperature Rating of Conductor			
	2001–5000 Volts Ampacity		5001–35,000 Volts Ampacity	
Conductor Size (AWG or kcmil)	90°C (194°F) Type MV-90	105°C (221°F) Type MV-105	90°C (194°F) Type MV-90	105°C (221°F) Type MV-105
8	50	57	—	—
6	70	77	75	84
4	90	100	100	110
2	125	135	130	150
1	145	160	150	175
1/0	170	185	175	200
2/0	195	215	200	230
3/0	225	250	230	265
4/0	265	290	270	305
250	295	325	300	335
350	365	405	370	415
500	460	510	460	515
750	600	665	590	660
1000	715	800	700	780

Note: Refer to 315.60(E) for basis of ampacities, 315.10(A) for conductor maximum operating temperature and application, and 315.60(D)(4) for the ampacity correction factors where the ambient air temperature is other than 40°C (104°F).