

National Electrical Code

Allowable Ampacities of Insulated Conductors Rated 0-2000 Volts

As Excerpted from the 2002 National Electrical Code

Ampacities of Not More Than Three Current-Carrying Conductors in Raceway, Cable or Earth. Based on Ambient Temperature of 30°C (86°F)

SIZE AWG OR kcmil	Copper Conductors						Aluminum Conductors						SIZE AWG OR kcmil
	Temperature Rating of Conductor						Temperature Rating of Conductor						
	60°C		75°C		90°C		60°C		75°C		90°C		
	TYPES		TYPES		TYPES		TYPES		TYPES		TYPES		
	TW UF	RHW THW THWN	THHW XHHW USE	RHH RHW-2 XHHW XHHW-2 XHH	THHW THWN-2 THW-2 THHN USE-2		TW UF	RHW THW THWN	THHW XHHW USE	RHH RHW-2 XHHW XHHW-2 XHH	THHW THWN-2 THW-2 THHN USE-2		
14**	20	20		25		-	-	-				-	
12**	25	25		30		20	20	25				12**	
10**	30	35		40		25	30	35				10**	
8	40	50		55		30	40	45				8	
6	55	65		75		40	50	60				6	
4	70	85*		95*		55	65	75				4	
3	85	100*		110*		65	75	85				3	
2	95	115*		130*		75	90*	100*				2	
1	110	130*		150*		85	100*	115*				1	
1/0	125	150*		170*		100	120*	135*				1/0	
2/0	145	175*		195*		115	135*	150*				2/0	
3/0	165	200*		225*		130	155*	175*				3/0	
4/0	195	230*		260*		150	180*	205*				4/0	
250	215	255*		290*		170	205*	230*				250	
300	240	285		320		190	230*	255*				300	
350	260	310*		350*		210	250*	280*				350	
400	280	335*		380*		225	270	305				400	
500	320	380		430		260	310*	350*				500	
600	355	420		475		285	340*	385*				600	
700	385	460		520		310	375	420				700	
750	400	475		535		320	385	435				750	
800	410	490		555		330	395	450				800	
900	435	520		585		355	425	480				900	
1000	455	545		615		375	445	500				1000	
1250	495	590		665		405	485	545				1250	
1500	520	625		705		435	520	585				1500	
1750	545	650		735		455	545	615				1750	
2000	560	665		750		470	560	630				2000	

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(Notes to Accompany Table)

NOTE 1:

Temp.	Type and Location
	Type TW, wet or dry
	Type UF, wet or dry, or corrosive locations
	Types RHW, THW, THWN, USE, THHW, XHHW, wet or dry
	Types RHH, THHN, XHHW, XHH, dry and damp locations.
	Type THHW, dry locations.
	Types THWN-2, XHHW-2, THW-2, RHW-2, USE-2, wet or dry

NOTE 2:

Max. size of Type UF is 4/0 AWG.

Max. size of Types THWN and THHN - 1000 kcmil

Max. size of Type THHW is 1000 kcmil

NOTE 3:

The allowable values in the Ampacity Table are based on temperature alone and do not take voltage drop into consideration.

****** Unless specifically permitted in Section 240.4(E) through (G), the overcurrent protection shall not exceed 15 amperes for 14 AWG, 20 amperes for 12 AWG, and 30 amperes for 10 AWG copper; or 15 amperes for 12 AWG and 25 amperes for 10 AWG aluminum after any correction factors for ambient temperature and number of conductors have been applied.

NOTE 4:

Where the number of current-carrying conductors in a raceway or cable exceeds three, or where single conductors or multi-conductor cables are stacked or bundled longer than 24 inches without maintaining spacing and are not installed in raceways, the allowable ampacity of each conductor shall be reduced as shown in the following table:

Number of Current Carrying Conductors	Percent of Values in Table as Adjusted for Ambient Temp., if Necessary
4 thru 6	80
7 thru 9	70
10 thru 20	50
21 thru 30	45
31 thru 40	40
41 and above*	35

The above derating factors do not apply to conductors in nipples having a length not exceeding 24 inches.

NOTE 5:

For ambient temperatures other than 30°C, multiply the allowable ampacities by the appropriate factor shown below:

Ambient Temperature °C	Conductor Temperature			Ambient Temperature of
	60°C	75°C	90°C	
21 - 25	1.08	1.05	1.04	70 - 77
26 - 30	1.00	1.00	1.00	78 - 86
31 - 35	.91	.94	.96	87 - 95
36 - 40	.82	.88	.91	96 - 104
41 - 45	.71	.82	.87	105 - 113
46 - 50	.58	.75	.82	114 - 122
51 - 55	.41	.67	.76	123 - 131
56 - 60		.58	.71	132 - 140
61 - 70		.33	.58	141 - 158
71 - 80			.41	159 - 176

*For dwelling units, conductors, as listed below, shall be permitted as 120/240 volt, 3 wire, single phase service-entrance conductors, service lateral conductors and feeder conductors that serve as the main power feeder to a dwelling unit and are installed in raceway or cable with or without an equipment grounding conductor. For application of this section, the main power feeder shall be the feeder(s) between the main disconnect and the lighting and appliance branch-circuit panel board(s) and the feeder conductors to a dwelling unit shall not be required to be larger than their service entrance conductors. The grounded conductor shall be permitted to be smaller than the ungrounded conductors provided the requirements of Sections 215.2, 220.22 and 230.42 are met.

RHH, RHW, THHW, THW, THWN, THHN, XHHW, USE, RHW-2, THW-2, THWN-2, XHHW-2, SE, USE-2

Copper AWG or kcmil	Aluminum AWG or kcmil	Service or Feeder Rating (Amperes)
4	2	100
3	1	110
2	1/0	125
1	2/0	150
1/0	3/0	175
2/0	4/0	200
3/0	250	225
4/0	300	250
250	350	300
350	500	350
400	600	400

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