

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	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			25		12**
10**	30		35		40	25		30		35			35		10**
8	40		50		55	30		40		45			45		8
6	55		65		75	40		50		60			60		6
4	70		85*		95*	55		65		75			75		4
3	85		100*		110*	65		75		85			85		3
2	95		115*		130*	75		90*		100*			100*		2
1	110		130*		150*	85		100*		115*			115*		1
1/0	125		150*		170*	100		120*		135*			135*		1/0
2/0	145		175*		195*	115		135*		150*			150*		2/0
3/0	165		200*		225*	130		155*		175*			175*		3/0
4/0	195		230*		260*	150		180*		205*			205*		4/0
250	215		255*		290*	170		205*		230*			230*		250
300	240		285		320	190		230*		255*			255*		300
350	260		310*		350*	210		250*		280*			280*		350
400	280		335*		380*	225		270		305			305		400
500	320		380		430	260		310*		350*			350*		500
600	355		420		475	285		340*		385*			385*		600
700	385		460		520	310		375		420			420		700
750	400		475		535	320		385		435			435		750
800	410		490		555	330		395		450			450		800
900	435		520		585	355		425		480			480		900
1000	455		545		615	375		445		500			500		1000
1250	495		590		665	405		485		545			545		1250
1500	520		625		705	435		520		585			585		1500
1750	545		650		735	455		545		615			615		1750
2000	560		665		750	470		560		630			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