

CONDUCTOR PROPERTIES

Size AWG/ kcmil	Area Cir. Mils	Conductors				dc Resistance at 75°C (167°F)		
		Stranding		Overall		Copper		Aluminum
		Quan- tity	Diam. (in.)	Diam. (in.)	Area (in. ²)	Uncoated ohm/kFT	Coated ohm/kFT	ohm/ kFT
18	1620	1	—	0.040	0.001	7.77	8.08	12.8
18	1620	7	0.015	0.046	0.002	7.95	8.45	13.1
16	2580	1	—	0.051	0.002	4.89	5.08	8.05
16	2580	7	0.019	0.058	0.003	4.99	5.29	8.21
14	4110	1	—	0.064	0.003	3.07	3.19	5.06
14	4110	7	0.024	0.073	0.004	3.14	3.26	5.17
12	6530	1	—	0.081	0.005	1.93	2.01	3.18
12	6530	7	0.030	0.092	0.006	1.98	2.05	3.25
10	10380	1	—	0.102	0.008	1.21	1.26	2.00
10	10380	7	0.038	0.116	0.011	1.24	1.29	2.04
8	16510	1	—	0.128	0.013	0.764	0.786	1.26
8	16510	7	0.049	0.146	0.017	0.778	0.809	1.28
6	26240	7	0.061	0.184	0.027	0.491	0.510	0.808
4	41740	7	0.077	0.232	0.042	0.308	0.321	0.508
3	52620	7	0.087	0.260	0.053	0.245	0.254	0.403
2	66360	7	0.097	0.292	0.067	0.194	0.201	0.319
1	83690	19	0.066	0.332	0.087	0.154	0.160	0.253
1/0	105600	19	0.074	0.372	0.109	0.122	0.127	0.201
2/0	133100	19	0.084	0.418	0.137	0.0967	0.101	0.159
3/0	167800	19	0.094	0.470	0.173	0.0766	0.0797	0.126
4/0	211600	19	0.106	0.528	0.219	0.0608	0.0626	0.100
250	—	37	0.082	0.575	0.260	0.0515	0.0535	0.0847
300	—	37	0.090	0.630	0.312	0.0429	0.0446	0.0707
350	—	37	0.097	0.681	0.364	0.0367	0.0382	0.0605
400	—	37	0.104	0.728	0.416	0.0321	0.0331	0.0529
500	—	37	0.116	0.813	0.519	0.0258	0.0265	0.0424
600	—	61	0.099	0.893	0.626	0.0214	0.0223	0.0353
700	—	61	0.107	0.964	0.730	0.0184	0.0189	0.0303
750	—	61	0.111	0.998	0.782	0.0171	0.0176	0.0282
800	—	61	0.114	1.030	0.834	0.0161	0.0166	0.0265
900	—	61	0.122	1.094	0.940	0.0143	0.0147	0.0235
1000	—	61	0.128	1.152	1.042	0.0129	0.0132	0.0212
1250	—	91	0.117	1.289	1.305	0.0103	0.0106	0.0169
1500	—	91	0.128	1.412	1.566	0.00858	0.00883	0.0141
1750	—	127	0.117	1.526	1.829	0.00735	0.00756	0.0121
2000	—	127	0.126	1.632	2.092	0.00643	0.00662	0.0106

These resistance values are valid ONLY for the parameters as given. Using conductors having coated strands, different stranding type, and, especially, other temperatures changes the resistance. Equation for temperature change: $R_2 = R_1 [1 + \alpha(T_2 - 75)]$ where $\alpha_{Cu} = 0.00323$, $\alpha_{Al} = 0.00330$ at 75°C (167°F).

See NEC Chapter 9, Table 8. See *Ugly's* pages 139–140 for metric conversions.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Chapter 9, Table 8, as modified.



**ac RESISTANCE AND REACTANCE FOR 600-VOLT CABLES, THREE-PHASE,
60-HZ, 75°C (167°F): THREE SINGLE CONDUCTORS IN CONDUIT**

Size AWG/ kcmil	Ohms to Neutral per 1000 Feet														
	X (Reactance) for All Wires			ac Resistance for Uncoated Copper Wires			ac Resistance for Aluminum Wires			Effective Z at 0.85 PF for Uncoated Copper Wires			Effective Z at 0.85 PF for Aluminum Wires		
	PVC Conduit	Al Conduit	Steel Conduit	PVC Conduit	Al Conduit	Steel Conduit	PVC Conduit	Al Conduit	Steel Conduit	PVC Conduit	Al Conduit	Steel Conduit	PVC Conduit	Al Conduit	Steel Conduit
14	0.058	0.073	3.1	3.1	0.073	0.073	3.1	3.1	0.073	0.073	3.1	3.1	0.073	0.073	3.1
12	0.054	0.068	2.0	2.0	0.068	0.068	2.0	2.0	0.068	0.068	2.0	2.0	0.068	0.068	2.0
10	0.050	0.063	1.2	1.2	0.063	0.063	1.2	1.2	0.063	0.063	1.2	1.2	0.063	0.063	1.2
8	0.052	0.065	0.78	0.78	0.065	0.065	0.78	0.78	0.065	0.065	0.78	0.78	0.065	0.065	0.78
6	0.051	0.064	0.49	0.49	0.064	0.064	0.49	0.49	0.064	0.064	0.49	0.49	0.064	0.064	0.49
4	0.048	0.060	0.31	0.31	0.060	0.060	0.31	0.31	0.060	0.060	0.31	0.31	0.060	0.060	0.31
3	0.047	0.059	0.25	0.25	0.059	0.059	0.25	0.25	0.059	0.059	0.25	0.25	0.059	0.059	0.25
2	0.045	0.057	0.19	0.19	0.057	0.057	0.19	0.19	0.057	0.057	0.19	0.19	0.057	0.057	0.19
1	0.046	0.057	0.15	0.16	0.057	0.16	0.16	0.16	0.057	0.16	0.16	0.16	0.057	0.16	0.16
1/0	0.044	0.055	0.12	0.13	0.055	0.13	0.13	0.13	0.055	0.13	0.13	0.13	0.055	0.13	0.13
2/0	0.043	0.054	0.10	0.10	0.054	0.10	0.10	0.10	0.054	0.10	0.10	0.10	0.054	0.10	0.10
3/0	0.042	0.052	0.077	0.082	0.052	0.082	0.082	0.082	0.052	0.082	0.082	0.082	0.052	0.082	0.082
4/0	0.041	0.051	0.062	0.067	0.051	0.067	0.067	0.067	0.051	0.067	0.067	0.067	0.051	0.067	0.067
250	0.041	0.052	0.052	0.057	0.052	0.057	0.057	0.057	0.052	0.057	0.057	0.057	0.052	0.057	0.057
300	0.041	0.051	0.044	0.049	0.044	0.049	0.049	0.049	0.044	0.049	0.049	0.049	0.044	0.049	0.049
350	0.040	0.050	0.038	0.043	0.038	0.043	0.043	0.043	0.038	0.043	0.043	0.043	0.038	0.043	0.043
400	0.040	0.049	0.033	0.038	0.033	0.038	0.038	0.038	0.033	0.038	0.038	0.038	0.033	0.038	0.038
500	0.039	0.048	0.027	0.032	0.027	0.032	0.032	0.032	0.027	0.032	0.032	0.032	0.027	0.032	0.032
600	0.038	0.048	0.023	0.028	0.023	0.028	0.028	0.028	0.023	0.028	0.028	0.028	0.023	0.028	0.028
750	0.038	0.048	0.019	0.024	0.019	0.024	0.024	0.024	0.019	0.024	0.024	0.024	0.019	0.024	0.024
1000	0.037	0.046	0.015	0.019	0.015	0.019	0.019	0.019	0.015	0.019	0.019	0.019	0.015	0.019	0.019

Notes: See NEC Chapter 9, Table 9 for assumptions and explanations. See Ugly's pages 139-140 for metric conversions.
Source: NFPA 70®, National Electrical Code®, 2026 edition, NFPA, Quincy, MA, 2025, Chapter 9, Table 9, as modified.

AMPACITIES OF INSULATED CONDUCTORS

Ampacities of Insulated Conductors with Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried)

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.4(1)]						Size AWG or kcmil
	60°C (140°F)	75°C (167°F)	90°C (194°F)	60°C (140°F)	75°C (167°F)	90°C (194°F)	
	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, XHHW-2, USE, ZW	Types TBS, SA, SIS, FEP, FEPB, M, PFA, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, XHHN, Z, ZW-2	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, XHHW-2, USE	Types TBS, SA, SIS, THHN, THHW, THW-2, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, XHHN-2, XHHN	
Copper			Aluminum or Copper-Clad Aluminum				
16 ¹	10	15 ²	20 ²	—	—	—	—
14 ¹	15	20	25	10 ³	15 ^{2,3}	20 ^{2,3}	14 ¹
12 ¹	20	25	30	15	20	25	12 ¹
10 ¹	30	35	40	25	30	35	10 ¹
8	40	50	55	35	40	45	8
6	55	65	75	40	50	55	6
4	70	85	95	55	65	75	4
3	85	100	115	65	75	85	3
2	95	115	130	75	90	100	2
1	110	130	145	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	195	230	260	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	350	420	475	285	340	385	600
700	385	460	520	315	375	425	700
750	400	475	535	320	385	435	750
800	410	490	555	330	395	445	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	525	625	705	435	520	585	1500
1750	545	650	735	455	545	615	1750
2000	555	665	750	470	560	630	2000

Notes:

- Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F).
 - Section 310.15(C)(1) shall be referenced for more than three current-carrying conductors.
 - Section 310.16 shall be referenced for conditions of use.
 - Ampacity for 18 AWG copper Type MI and Type MTW shall be 14 amperes at 90°C (194°F).
 - Ampacity for 16 AWG copper Type MI and Type MTW shall be 18 amperes at 90°C (194°F).
- ¹Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere in the code.
²Ampacity shall be used for adjustment or correction only.
³Ampacity shall be applicable only to copper-clad aluminum conductors.
 See *Ugly's* page 77 for Adjustment Examples.
 Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 310.16, as modified.

AMPACITIES OF INSULATED CONDUCTORS

Ampacities of Single-Insulated Conductors in Free Air

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.4(1).]						Size AWG or kcmil
	60°C (140°F)	75°C (167°F)	90°C (194°F)	60°C (140°F)	75°C (167°F)	90°C (194°F)	
	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, XHHWN, ZW	Types TBS, SA, SIS, FEP, FEPB, MI, PFA, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, XHHWN, XHHWN-2, XHHN, Z, ZW-2	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, XHHWN	Types TBS, SA, SIS, THHN, THHW, THW-2, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, XHHWN, XHHWN-2, XHHN	
Copper			Aluminum or Copper-Clad Aluminum				
18	—	—	18	—	—	—	—
16	—	—	24	—	—	—	—
14*	25	30	35	—	—	—	—
12*	30	35	40	25	30	35	12*
10*	40	50	55	35	40	45	10*
8	60	70	80	45	55	60	8
6	80	95	105	60	75	85	6
4	105	125	140	80	100	115	4
3	120	145	165	95	115	130	3
2	140	170	190	110	135	150	2
1	165	195	220	130	155	175	1
1/0	195	230	260	150	180	205	1/0
2/0	225	265	300	175	210	235	2/0
3/0	260	310	350	200	240	270	3/0
4/0	300	360	405	235	280	315	4/0
250	340	405	455	265	315	355	250
300	375	445	500	290	350	395	300
350	420	505	570	330	395	445	350
400	455	545	615	355	425	480	400
500	515	620	700	405	485	545	500
600	575	690	780	455	540	615	600
700	630	755	850	500	595	670	700
750	655	785	885	515	620	700	750
800	680	815	920	535	645	725	800
900	730	870	980	580	700	790	900
1000	780	935	1055	625	750	845	1000
1250	890	1065	1200	710	855	965	1250
1500	980	1175	1325	795	950	1070	1500
1750	1070	1280	1445	875	1050	1185	1750
2000	1155	1385	1560	960	1150	1295	2000

Notes:
 1. Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F).
 2. Section 310.17 shall be referenced for conditions of use.
 *Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere in the code.
 See Ugly's page 77 for Adjustment Examples.
 Source: NFPA 70®, National Electrical Code®, 2026 edition, NFPA, Quincy, MA, 2025, Table 310.17, as modified.



AMPACITIES OF INSULATED CONDUCTORS

Ampacities of Insulated Conductors with Not More Than Three Current-Carrying Conductors in Raceway or Cable

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.4(1).]				Size AWG or kcmil
	150°C (302°F)	200°C (392°F)	250°C (482°F)	150°C (302°F)	
	Type Z	Types FEP, FEPB, PFA, SA	Types PFAH, TFE	Type Z	
	Copper		Nickel or Nickel-Coated Copper	Aluminum or Copper-Clad Aluminum	
14	34	36	39	—	14
12	43	45	54	30	12
10	55	60	73	44	10
8	76	83	93	57	8
6	96	110	117	75	6
4	120	125	148	94	4
3	143	152	166	109	3
2	160	171	191	124	2
1	186	197	215	145	1
1/0	215	229	244	169	1/0
2/0	251	260	273	198	2/0
3/0	288	297	308	227	3/0
4/0	332	346	361	260	4/0

Notes:

1. Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 40°C (104°F).
2. Section 310.15(C)(1) shall be referenced for more than three current-carrying conductors.
3. Section 310.18 shall be referenced for conditions of use.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 310.18 as modified.

AMPACITIES OF INSULATED CONDUCTORS

Ampacities of Single-Insulated Conductors in Free Air

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.4(1).]				Size AWG or kcmil
	150°C (302°F)	200°C (392°F)	250°C (482°F)	150°C (302°F)	
	Type Z	Types FEP, FEPB, PFA, SA	Types PFAH, TFE	Type Z	
	Copper		Nickel or Nickel-Coated Copper	Aluminum or Copper-Clad Aluminum	
14	46	54	59	—	14
12	60	68	78	47	12
10	80	90	107	63	10
8	106	124	142	83	8
6	155	165	205	112	6
4	190	220	278	148	4
3	214	252	327	170	3
2	255	293	381	198	2
1	293	344	440	228	1
1/0	339	399	532	263	1/0
2/0	390	467	591	305	2/0
3/0	451	546	708	351	3/0
4/0	529	629	830	411	4/0

Notes:

1. Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 40°C (104°F).

2. Section 310.19 shall be referenced for conditions of use.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 310.19 as modified.

AMPACITY CORRECTION AND ADJUSTMENT FACTORS

Examples

Ugly's page 73 shows ampacity values for not more than three current-carrying conductors in a raceway, cable and the wiring installed in a 30°C (86°F) ambient temperature.

Example 1: A raceway contains three 3 AWG THWN conductors for a three-phase circuit at an ambient temperature of 30°C (86°F).

Ugly's page 73, 75°C (167°F) column indicates **100 amps**.

Example 2: A raceway contains three 3 AWG THWN conductors for a three-phase circuit at an ambient temperature of 40°C (104°F). *Ugly's* page 73, 75°C (167°F) column indicates **100 amps**. This value must be corrected for ambient temperature (see note on Temperature Correction Factors at bottom of *Ugly's* page 73). 40°C (104°F) factor is **0.88**.

$100 \text{ Amps} \times 0.88 = \mathbf{88 \text{ Amps}}$ = corrected ampacity

Example 3: A raceway contains six 3 AWG THWN conductors for two three-phase circuits at an ambient temperature of 30°C (86°F).

Ugly's page 73, 75°C (167°F) column indicates **100 amps**. This value must be adjusted for more than three current-carrying conductors. The table on *Ugly's* page 78 requires an adjustment of **80%** for four through six current-carrying conductors.

$100 \text{ Amps} \times 80\% = \mathbf{80 \text{ Amps}}$

The adjusted ampacity is **80 Amps**.

Example 4: A raceway contains six 3 AWG THWN conductors for two three-phase circuits in an ambient temperature of 40°C (104°F). These conductors must be corrected and adjusted (or derated) for both ambient temperature and number of current-carrying conductors.

Ugly's page 73, 75°C (167°F) column indicates **100 amps**.

NEC Table 310.15(B)(1)(1), 40°C (104°F) temperature factor is **0.88**.

Ugly's page 78, 4 - 6 conductor factor is **0.80**.

$100 \text{ Amps} \times 0.88 \times 0.80 = \mathbf{70.4 \text{ Amps}}$

The new derated ampacity is **70.4 Amps**.

ADJUSTMENT FACTORS

For More Than Three Current-Carrying Conductors in a Raceway or Cable

Number of Current-Carrying Conductors*	Percent of Values in Table 310.16, 310.18, and 310.20 as Adjusted for Ambient Temperature if Necessary
4-6	80
7-9	70
10-20	50
21-30	45
31-40	40
41 and above	35

*Number of conductors is the total number of conductors in the raceway or cable, including spare conductors. The count shall be adjusted in accordance with 310.15(E) and 310.15(F). The count shall not include conductors that are connected to electrical components that cannot be simultaneously energized.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 310.15(C)(1).

Conductor and Equipment Termination Ratings*

Examples:

A 150-amps circuit breaker is labeled for 75°C (167°F) terminations and is selected to be used for a 145-amps, noncontinuous load. It would be permissible to use a 1/0 THWN conductor that has a 75°C (167°F) insulation rating and has an ampacity of 150 amps (*Ugly's* page 73).

When a THHN (90°C [194°F]) conductor is connected to a 75°C (167°F) termination, it is limited to the 75°C (167°F) ampacity. Therefore, if a 1 THHN conductor with a rating of 145 amps were connected to a 75°C (167°F) terminal, its ampacity would be limited to 130 amps instead of 150 amps, which is too small for the load (*Ugly's* page 73).

If the 145-amp, noncontinuous load listed above uses 1/0 THWN conductors rated 150 amps and the conductors are in an ambient temperature of 40°C (104°F), the conductors would have to be corrected for the ambient temperature.

ADJUSTMENT FACTORS

From *NEC* Table 310.15(B)(1)(1), 40°C (104°F) ambient temperature correction factor = **0.88**

1/0 THWN = 150 Amps

150 Amps x 0.88 = **132 Amps** (which is too small for the 145-amp load, so a larger size conductor is required).

Apply temperature correction factors to the next size THWN conductor.

2/0 THWN = 175 Amps (from the 75°C [167°F] column—*Ugly's* page 73)

175 Amps x 0.88 = **154 Amps**. This size is suitable for the 145-amps load.

The advantage of using 90°C (194°F) conductors is that you can apply ampacity derating factors to the higher 90°C (194°F) ampacity rating, and it may save you from going to a larger conductor.

1/0 THHN = 170 Amps (from the 90°C [194°F] column—*Ugly's* page 73).

40°C [104°F] ambient temperature correction factor for a 90°C conductor = 0.91 (*NEC* Table 310.15(B)(1)(1))

170 Amps x 0.91 = **154.7 Amps**.

This size is suitable for the 145-amp load.

This 90°C [194°F] conductor can be used but can never have a final derated ampacity over the rating of 1/0 THWN 75°C [167°F] rating of 150 amps.

You are allowed to use higher temperature (insulated conductors) such as THHN (90°C [194°F]) conductors on 60°C (140°F) or 75°C (167°F) terminals of circuit breakers and equipment, and you are allowed to derate from the higher value for temperature and number of conductors, but the final derated ampacity is limited to the 60°C or 75°C (140°F or 167°F) terminal insulation labels.

*See *NEC* 2026 Section 110.14(C)(1).



CONDUCTOR APPLICATIONS AND INSULATIONS

Trade Name	Letter	Max. Temp.	Application Provisions
Fluorinated Ethylene Propylene	FEP	90°C (194°F)	Dry and Damp Locations
	FEPB	200°C (392°F)	Dry Locations—Special Applications ¹
Mineral Insulation (Metal Sheathed)	MI	90°C (194°F)	Dry and Wet Locations
		250°C (482°F)	Special Applications ¹
Moisture-, Heat-, and Oil-Resistant Thermoplastic	MTW	60°C (140°F)	Machine Tool Wiring in Wet Locations
		90°C (194°F)	Machine Tool Wiring in Dry Locations, Informational Note: See NFPA 79
Paper		85°C (185°F)	For Underground Service Conductors, or By Special Permission
Perfluoro-Alkoxy	PFA	90°C (194°F)	Dry and Damp Locations
		200°C (392°F)	Dry Locations—Special Applications ¹
Perfluoro-Alkoxy	PFAH	250°C (482°F)	Dry Locations Only. Only For Leads Within Apparatus or Within Raceways Connected to Apparatus (Nickel or Nickel-Coated Copper Only)
Thermoset	RHH	90°C (194°F)	Dry and Damp Locations
Moisture-Resistant Thermoset	RHW	75°C (167°F)	Dry and Wet Locations
Moisture-Resistant Thermoset	RHW-2	90°C (194°F)	Dry and Wet Locations
Silicone	SA	90°C (194°F)	Dry and Damp Locations
		200°C (392°F)	Special Applications ¹
Thermoset	SIS	90°C (194°F)	Switchboard and Switchgear Wiring Only
Thermoplastic and Fibrous Outer Braid	TBS	90°C (194°F)	Switchboard and Switchgear Wiring Only

See Ugly's page 82 for footnotes on special provisions and/or applications.

(continued on next page)



CONDUCTOR APPLICATIONS AND INSULATIONS

Trade Name	Letter	Max. Temp.	Application Provisions
Extruded Polytetrafluoro-Ethylene	TFE	250°C (482°F)	Dry Locations Only, Only for Leads Within Apparatus or Within Raceways Connected to Apparatus, or as Open Wiring (Nickel or Nickel-Coated Copper Only)
Heat-Resistant Thermoplastic	THHN	90°C (194°F)	Dry and Damp Locations
Moisture- and Heat-Resistant Thermoplastic	THHW	75°C (167°F)	Wet Location
		90°C (194°F)	Dry Location
Moisture- and Heat-Resistant Thermoplastic	THW	75°C (167°F)	Dry and Wet Locations
		90°C (194°F)	Special Appl. Within Electric Discharge Lighting Equipment, Limited to 1000 Open-Circuit Volts or Less (Size 14-8 Only as Permitted in Section 410.68)
	THW-2	90°C (194°F)	Dry and Wet Locations
Moisture- and Heat-Resistant Thermoplastic	THWN	75°C (167°F)	Dry and Wet Locations
	THWN-2	90°C (194°F)	
Moisture-Resistant Thermoplastic	TW	60°C (140°F)	Dry and Wet Locations
Underground Feeder and Branch-Circuit Cable Single Conductor (For Type "UF" Cable Employing More Than 1 Conductor, See Part II of Article 340)	UF	60°C (140°F)	See <i>NEC</i> Article 340, Part II
		75°C (167°F) ²	

See *Ugly's* page 82 for footnotes on special provisions and/or applications.

(continued on next page)



CONDUCTOR APPLICATIONS AND INSULATIONS

Trade Name	Letter	Max. Temp.	Application Provisions
Underground Service-Entrance Cable Single Conductor (For Type "USE" Cable Employing More Than 1 Conductor, See Part II of Article 338)	USE	75°C (167°F) ²	See <i>NEC</i> Article 338, Part II
	USE-2	90°C (194°F)	
Thermoset	XHH	90°C (194°F)	Dry and Damp Locations
Flame-Retardant Thermoset	XHHN	90°C (194°F)	Dry and Damp Locations
Moisture-Resistant Thermoset	XHHW	90°C (194°F)	Dry and Damp Locations
		75°C (167°F)	Wet Locations
Moisture-Resistant, Thermoset	XHHW-2	90°C (194°F)	Dry and Wet Locations
Flame-Retardant, Moisture-Resistant Thermoset	XHWN	75°C (167°F)	Dry and Wet Locations
	XHWN-2	90°C (194°F)	
Modified Ethylene Tetrafluoro-Ethylene	Z	90°C (194°F)	Dry and Damp Locations
		150°C (302°F)	Dry Locations—Special Applications ¹
Modified Ethylene Tetrafluoro-Ethylene	ZW	75°C (167°F)	Wet Locations
		90°C (194°F)	Dry and Damp Locations
		150°C (302°F)	Dry Locations—Special Applications ¹
	ZW-2	90°C (194°F)	Dry and Wet Locations

¹ Higher temperature-rated constructions shall be permitted where design conditions require maximum conductor operating temperatures above 90°C (194°F).

² The ampacity of Type UF cable shall be limited in accordance with 340.80.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 310.4(1), as modified.

Note: Conductors in Table 310.4(1) shall be permitted to be rated up to 1000 volts if listed and marked.



MAXIMUM NUMBER OF CONDUCTORS IN TRADE SIZES OF CONDUIT OR TUBING

The *National Electrical Code*® shows a separate table for each type of conduit. In order to keep *Ugly's Electrical References* in a compact and easy-to-use format, the following tables are included:

Electrical Metallic Tubing (EMT), Electrical Nonmetallic Tubing (ENT), PVC 40, PVC 80, Rigid Metal Conduit, Flexible Metal Conduit, and Liquidtight Flexible Metal Conduit.

When other types of conduit are used, refer to *NEC* Informative Annex C or use method shown below to figure conduit size.

Example #1: All Same Wire Size and Type Insulation.

10 – 12 AWG RHH (with outer covering) in Intermediate Metal Conduit.

Go to the *RHH Conductor Square Inch Area Table*. (Ugly's page 98)

12 AWG RHH = 0.0353 sq. in. 10 x 0.0353 sq. in. = 0.353 sq. in.

Go to *Intermediate Metal Conduit Square Inch Area Table*. (Ugly's page 101)
Use "Over 2 Wires 40%" column.

¾-inch conduit = 0.235 sq. in. (less than 0.353, so it's too small).

1-inch conduit = 0.384 sq. in. (greater than 0.353, so it's correct size).

Example #2: Different Wire Sizes or Types Insulation.

10 – 12 AWG RHH (with outer covering) and 10 – 10 AWG THHN in Liquidtight Nonmetallic Conduit (LFNC-B).

Go to the *RHH Conductor Square Inch Area Table*. (Ugly's page 98)

12 AWG RHH = 0.0353 sq. in. 10 x 0.0353 sq. in. = 0.353 sq. in.

Go to the *THHN Conductor Square Inch Area Table*. (Ugly's page 98)

10 AWG THHN = 0.0211 sq. in. 10 x 0.0211 sq. in. = 0.211 sq. in.

0.353 sq. in. + 0.211 sq. in. = 0.564 sq. in.

Go to *Liquidtight Flexible Nonmetallic Conduit (LFNC-B) Square Inch Table*. (Ugly's page 102)

Use "Over 2 Wires 40%" column.

1-inch conduit = 0.349 sq. in. (less than 0.564, so it's too small).

1½-inch conduit = 0.611 sq. in. (greater than 0.564, so it's the correct size).

*Note 1**: All conductors must be counted including grounding conductors for fill percentage.
Note 2: When all conductors are of same type and size, decimals 0.8 and larger can be rounded up.

*Note 3***: These are minimum size calculations, under certain conditions jamming can occur and the next size conduit must be used.

*Note 4****: **Caution**—When over three current carrying conductors are used in the same circuit, conductor ampacity must be lower (adjusted).

* See Appendix C and Chapter 9 2026 *NEC* for complete tables and examples.

** See Chapter 9 Table 1 and Notes to Tables 1–10, 2026 *NEC*.

*** See 2026 *NEC* 310.15 for adjustment factors for temperature and number of current-carrying conductors.



MAXIMUM NUMBER OF CONDUCTORS IN ELECTRICAL METALLIC TUBING

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2		
RHH, RHW, RHW-2	14	4	7	11	20	27	46	80	120	157	201	302	427
	12	3	6	9	17	23	38	66	100	131	167	251	354
	10	2	5	8	13	18	30	53	81	105	135	203	286
	8	1	2	4	7	9	16	28	42	55	70	106	150
	6	1	1	3	5	8	13	22	34	44	58	85	120
	4	1	1	2	4	6	10	17	26	34	44	66	94
	3	1	1	1	4	5	9	15	23	30	38	58	82
	2	1	1	1	3	4	7	13	20	26	33	50	71
	1	0	1	1	1	3	5	9	13	17	22	33	47
	1/0	0	1	1	1	2	4	7	11	15	19	29	41
	2/0	0	1	1	1	2	4	6	10	13	17	25	35
	3/0	0	0	1	1	1	3	5	8	11	14	21	30
	4/0	0	0	1	1	1	3	5	7	9	12	18	26
	250	0	0	0	1	1	1	3	5	7	9	14	20
	300	0	0	0	1	1	1	3	5	6	8	12	17
	350	0	0	0	1	1	1	3	4	6	7	11	16
	400	0	0	0	1	1	1	2	4	5	7	10	14
500	0	0	0	0	1	1	2	3	4	6	8	12	
600	0	0	0	0	1	1	1	3	4	5	7	10	
700	0	0	0	0	0	1	1	2	3	4	6	9	
750	0	0	0	0	0	1	1	2	3	4	6	8	
TW, THHW, THW, THW-2	14	8	15	25	43	58	96	168	254	332	424	638	900
12	6	11	19	33	45	74	129	195	255	326	490	691	
10	5	8	14	24	33	55	96	145	190	243	365	515	
8	2	5	8	13	18	30	53	81	105	135	203	286	
RHH*, RHW*, RHW-2*	14	6	10	16	28	39	64	112	169	221	282	424	599
12	4	8	13	23	31	51	90	136	177	227	341	481	
10	3	6	10	18	24	40	70	106	138	177	266	376	
8	1	4	6	10	14	24	42	63	83	106	159	225	
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	6	1	3	4	8	11	18	32	48	63	81	122	172
4	1	1	3	6	8	13	24	36	47	60	91	128	
3	1	1	3	5	7	12	20	31	40	52	78	110	
2	1	1	2	4	6	10	17	26	34	44	66	94	
1	1	1	1	3	4	7	12	18	24	31	46	66	
1/0	0	1	1	2	3	6	10	16	20	26	40	56	
2/0	0	1	1	1	3	5	9	13	17	22	33	47	
3/0	0	1	1	1	2	4	7	11	15	19	28	40	
4/0	0	0	1	1	1	3	6	9	12	16	24	33	
250	0	0	1	1	1	3	5	7	10	13	19	27	
300	0	0	1	1	1	2	4	6	8	11	16	23	
350	0	0	0	1	1	1	4	6	7	10	15	21	
400	0	0	0	1	1	1	3	5	7	9	13	19	
500	0	0	0	1	1	1	3	4	6	7	11	16	
600	0	0	0	1	1	1	2	3	4	6	9	13	
700	0	0	0	0	1	1	1	3	4	5	8	11	
750	0	0	0	0	1	1	1	3	4	5	7	10	
THHN, THWN, THWN-2	14	12	22	35	61	84	138	241	364	476	608	914	1290
12	9	16	28	45	61	101	176	266	347	443	666	941	
10	5	10	16	28	38	63	111	167	219	279	420	593	
8	3	6	9	16	22	36	64	96	126	161	242	342	
6	2	4	7	12	16	26	46	69	91	116	175	247	
4	1	2	4	7	10	16	28	43	56	71	107	152	
3	1	1	3	6	8	13	24	36	47	60	91	128	
2	1	1	3	5	7	11	20	30	40	51	76	108	
1	1	1	1	4	5	8	15	22	29	37	56	80	

(continued on next page)

**MAXIMUM NUMBER OF CONDUCTORS
IN ELECTRICAL METALLIC TUBING**

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
THHN, THWN, THWN-2	1/0	1	1	1	3	4	7	12	19	25	32	47	67
	2/0	0	1	1	2	3	6	10	16	20	26	40	56
	3/0	0	1	1	1	3	5	8	13	17	22	33	46
	4/0	0	1	1	1	2	4	7	11	14	18	27	38
	250	0	0	1	1	1	3	6	9	11	15	22	31
	300	0	0	1	1	1	3	5	7	10	13	19	27
	350	0	0	1	1	1	2	4	6	8	11	17	24
	400	0	0	0	1	1	1	4	6	8	10	15	21
	500	0	0	0	1	1	1	3	5	6	8	12	17
	600	0	0	0	1	1	1	2	4	5	7	10	14
700	0	0	0	1	1	1	2	3	4	6	9	12	
750	0	0	0	0	1	1	1	3	4	5	8	12	
FEP, FEPB, PFA, PFAH, TFE	14	12	21	34	60	81	134	234	354	462	590	886	1252
	12	9	15	25	43	59	98	171	258	337	430	647	913
	10	6	11	18	31	42	70	122	185	241	309	464	655
	8	3	6	10	18	24	40	70	106	138	177	266	376
	6	2	4	7	12	17	28	50	75	98	126	189	267
	4	1	3	5	9	12	20	35	53	69	88	132	187
	3	1	2	4	7	10	16	29	44	57	73	110	155
	2	1	1	3	6	8	13	24	36	47	60	91	128
PFA, PFAH, TFE	1	1	1	2	4	6	9	16	25	33	42	63	89
	1/0	1	1	1	3	5	8	14	21	27	35	53	74
	2/0	0	1	1	3	4	6	11	17	22	29	43	61
	3/0	0	1	1	2	3	5	9	14	18	24	36	51
Z	14	14	25	41	72	98	161	282	426	556	711	1068	1508
	12	10	18	29	51	69	114	200	302	394	504	758	1070
	10	6	11	18	31	42	70	122	185	241	309	464	655
	8	4	7	11	20	27	44	77	117	153	195	293	414
	6	3	5	8	14	19	31	54	82	107	137	206	291
	4	1	3	5	9	13	21	37	56	74	94	142	200
	3	1	2	4	7	9	15	27	41	54	69	103	146
	2	1	1	3	6	8	13	22	34	45	57	86	121
	1	1	1	2	4	6	10	18	28	36	46	70	98
	XHH, XHHW, XHHW-2, ZW	14	8	15	25	43	58	96	168	254	332	424	638
12		6	11	19	33	45	74	129	195	255	326	490	691
10		5	8	14	24	33	55	96	145	190	243	365	515
8		2	5	8	13	18	30	53	81	105	135	203	286
6		1	3	6	10	14	22	39	60	78	100	150	212
4		1	2	4	7	10	16	28	43	56	72	109	153
3		1	1	3	6	8	14	24	36	48	61	92	130
2		1	1	3	5	7	11	20	31	40	51	77	109
XHH, XHHW, XHHW-2	1	1	1	1	4	5	8	15	23	30	38	57	81
	1/0	1	1	1	3	4	7	13	19	25	32	48	68
	2/0	0	1	1	2	3	6	10	16	21	27	40	57
	3/0	0	1	1	1	3	5	9	13	17	22	33	47
	4/0	0	1	1	1	2	4	7	11	14	18	27	39
	250	0	0	1	1	1	3	6	9	12	15	22	32
	300	0	0	1	1	1	3	5	8	10	13	19	27
	350	0	0	1	1	1	2	4	7	9	11	17	24
	400	0	0	0	1	1	1	4	6	8	10	15	21
	500	0	0	0	1	1	1	3	5	6	8	12	18
600	0	0	0	1	1	1	2	4	5	6	10	14	
700	0	0	0	0	1	1	2	3	4	6	9	12	
750	0	0	0	0	1	1	1	3	4	5	8	12	

*Types RHH, RHW, and RHW-2 without outer covering.
See *Ugly's* page 141 for Trade Size/Metric Designator conversion.
Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.1, as modified.



MAXIMUM NUMBER OF CONDUCTORS IN ELECTRICAL NONMETALLIC TUBING

Type Letters	Cond. Size AWG/kcmil	%		Trade Sizes in inches			
		1/2	3/4	1	1 1/4	1 1/2	2
RHH, RHW, RHW-2	14	4	7	11	20	27	45
	12	3	5	9	16	22	37
	10	2	4	7	13	18	30
	8	1	2	4	7	9	15
	6	1	1	3	5	7	12
	4	1	1	2	4	6	10
	3	1	1	1	4	5	8
	2	1	1	1	3	4	7
	1	0	1	1	1	2	5
	1/0	0	1	1	1	2	4
	2/0	0	0	1	1	1	3
	3/0	0	0	1	1	1	3
	4/0	0	0	1	1	1	2
	250	0	0	0	1	1	1
	300	0	0	0	1	1	1
	350	0	0	0	1	1	1
	400	0	0	0	1	1	1
500	0	0	0	0	1	1	
600	0	0	0	0	1	1	
700	0	0	0	0	0	1	
750	0	0	0	0	0	1	
TW, THHW,	14	8	14	24	42	57	94
THW, THW-2	12	6	11	18	32	44	72
	10	4	8	13	24	32	54
	8	2	4	7	13	18	30
RHH*, RHW*, RHW-2*	14	5	9	16	28	38	63
	12	4	8	13	22	30	50
	10	3	6	10	17	24	39
	8	1	3	6	10	14	23
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	6	1	2	4	8	11	18
	4	1	1	3	6	8	13
	3	1	1	3	5	7	11
	2	1	1	2	4	6	10
	1	0	1	1	3	4	7
	1/0	0	1	1	2	3	6
	2/0	0	1	1	1	3	5
	3/0	0	1	1	1	2	4
	4/0	0	0	1	1	1	3
	250	0	0	1	1	1	3
	300	0	0	1	1	1	2
	350	0	0	0	1	1	1
	400	0	0	0	1	1	1
	500	0	0	0	1	1	1
	600	0	0	0	0	1	1
	700	0	0	0	0	1	1
	750	0	0	0	0	1	1
THHN, THWN, THWN-2	14	11	21	34	60	82	135
	12	8	15	25	43	59	99
	10	5	9	15	27	37	62
	8	3	5	9	16	21	36
	6	1	4	6	11	15	26
	4	1	2	4	7	9	16
	3	1	1	3	6	8	13
	2	1	1	3	5	7	11
	1	1	1	1	3	5	8

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MAXIMUM NUMBER OF CONDUCTORS IN ELECTRICAL NONMETALLIC TUBING

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches					
		1/2	3/4	1	1 1/4	1 1/2	2
THHN, THWN, THWN-2	1/0	1	1	1	3	4	7
	2/0	0	1	1	2	3	6
	3/0	0	1	1	1	3	5
	4/0	0	1	1	1	2	4
	250	0	0	1	1	1	3
	300	0	0	1	1	1	3
	350	0	0	1	1	1	2
	400	0	0	0	1	1	1
	500	0	0	0	1	1	1
	600	0	0	0	1	1	1
	700	0	0	0	0	1	1
750	0	0	0	0	1	1	
FEP, FEPB, PFA, PFAH, TFE	14	11	20	33	58	79	131
	12	8	15	24	42	58	96
	10	6	10	17	30	41	69
	8	3	6	10	17	24	39
	6	2	4	7	12	17	28
	4	1	3	5	8	12	19
	3	1	2	4	7	10	16
2	1	1	3	6	8	13	
PFA, PFAH, TFE	1	1	1	2	4	5	9
	1/0	1	1	1	3	4	8
	2/0	0	1	1	3	4	6
	3/0	0	1	1	2	3	5
Z	4/0	0	1	1	1	2	4
	14	13	24	40	70	95	158
	12	9	17	28	49	68	112
	10	6	10	17	30	41	69
	8	3	6	11	19	26	43
	6	2	4	7	13	18	30
	4	1	3	5	9	12	21
	3	1	2	4	6	9	15
	2	1	1	3	5	7	12
	1	1	1	2	4	6	10
XHH, XHHW, XHHW-2, ZW	14	8	14	24	42	57	94
	12	6	11	18	32	44	72
	10	4	8	13	24	32	54
	8	2	4	7	13	18	30
	6	1	3	5	10	13	22
	4	1	2	4	7	9	16
	3	1	1	3	6	8	13
2	1	1	3	5	7	11	
XHH, XHHW, XHHW-2	1	1	1	1	3	5	8
	1/0	0	1	1	3	4	7
	2/0	0	1	1	2	3	6
	3/0	0	1	1	1	3	5
	4/0	0	1	1	1	2	4
	250	0	0	1	1	1	3
	300	0	0	1	1	1	3
	350	0	0	1	1	1	2
	400	0	0	0	1	1	1
	500	0	0	0	1	1	1
	600	0	0	0	1	1	1
	700	0	0	0	0	1	1
	750	0	0	0	0	1	1

*Types RHH, RHW, and RHW-2 without outer covering.

See *Ugly's* page 141 for Trade Size/Metric Designator conversion.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.2, as modified.



MAXIMUM NUMBER OF CONDUCTORS IN RIGID PVC CONDUIT, SCHEDULE 40

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
RHH, RHW, RHW-2	14	4	7	11	20	27	45	64	99	133	171	269	390
	12	3	5	9	16	22	37	53	82	110	142	224	323
	10	2	4	7	13	18	30	43	66	89	115	181	261
	8	1	2	4	7	9	15	22	35	46	60	94	137
	6	1	1	3	5	7	12	18	28	37	48	76	109
	4	1	1	2	4	6	10	14	22	29	37	59	85
	3	1	1	1	4	5	8	12	19	25	33	52	75
	2	1	1	1	3	4	7	10	16	22	28	45	65
	1	0	1	1	1	3	5	7	11	14	19	29	43
	1/0	0	1	1	1	2	3	5	8	11	14	22	32
	2/0	0	0	1	1	1	3	5	8	11	14	22	32
	3/0	0	0	1	1	1	3	4	7	9	12	19	28
	4/0	0	0	1	1	1	2	4	6	8	10	16	24
	250	0	0	0	1	1	3	4	6	8	12	18	26
300	0	0	0	1	1	3	4	6	8	12	18	26	
350	0	0	0	1	1	2	3	5	6	10	14	21	
400	0	0	0	1	1	1	3	4	6	9	13	19	
500	0	0	0	0	1	1	3	4	5	8	11	16	
600	0	0	0	0	1	1	2	3	4	6	9	13	
700	0	0	0	0	1	1	1	2	3	4	6	9	
750	0	0	0	0	1	1	1	2	3	4	6	9	
TW, THHW, THW, THW-2	14	8	14	24	42	57	94	135	209	280	361	568	822
	12	6	11	18	32	44	72	103	160	215	277	436	631
	10	4	8	13	24	32	54	77	119	160	208	325	470
RHH*, RHW*, RHW-2*	14	5	9	16	28	38	63	90	139	186	240	378	546
	12	4	8	13	22	30	50	72	112	150	193	304	439
	10	3	6	10	17	24	39	56	87	117	150	237	343
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	8	1	3	6	10	14	23	33	52	70	90	142	205
	6	1	2	4	8	11	18	26	40	53	69	109	157
	4	1	1	3	6	8	13	19	30	40	51	81	117
	3	1	1	3	5	7	11	16	25	34	44	69	100
	2	1	1	2	4	6	10	14	22	29	37	59	85
	1	0	1	1	3	4	7	10	15	20	26	41	60
	1/0	0	1	1	2	3	6	8	13	17	22	35	51
	2/0	0	1	1	1	3	5	7	11	15	19	30	43
	3/0	0	1	1	1	2	4	6	9	12	16	25	36
	4/0	0	0	1	1	1	3	5	8	10	13	21	30
	250	0	0	1	1	1	3	4	6	8	11	17	25
	300	0	0	1	1	1	2	3	5	7	9	15	21
	350	0	0	0	1	1	1	3	5	6	8	13	19
	400	0	0	0	1	1	1	3	4	6	7	12	17
500	0	0	0	1	1	1	2	3	5	6	10	14	
600	0	0	0	0	1	1	1	3	4	5	8	11	
700	0	0	0	0	1	1	1	2	3	4	7	10	
750	0	0	0	0	1	1	1	2	3	4	6	9	
THHN, THWN, THWN-2	14	11	21	34	60	82	135	193	299	401	517	815	1178
	12	8	15	25	43	59	99	141	218	293	377	594	859
	10	5	9	15	27	37	62	89	137	184	238	374	541
	8	3	5	9	16	21	36	51	79	106	137	216	312
	6	1	4	6	11	15	26	37	57	77	99	156	225
	4	1	2	4	7	9	16	22	35	47	61	96	138
	3	1	1	3	6	8	13	19	30	40	51	81	117
2	1	1	3	5	7	11	16	25	33	43	68	98	
1	1	1	1	3	5	8	12	18	25	32	50	73	

(continued on next page)



MAXIMUM NUMBER OF CONDUCTORS IN RIGID PVC CONDUIT, SCHEDULE 40

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	
THHN, THWN, THWN-2	1/0	1	1	1	3	4	7	10	15	21	27	42	61
	2/0	0	1	1	2	3	6	8	13	17	22	35	51
	3/0	0	1	1	1	3	5	7	11	14	18	29	42
	4/0	0	1	1	1	2	4	6	9	12	15	24	35
	250	0	0	1	1	1	3	4	7	10	12	20	28
	300	0	0	1	1	1	3	4	6	8	11	17	24
	350	0	0	1	1	1	2	3	5	7	9	15	21
	400	0	0	0	1	1	1	3	5	6	8	13	19
	500	0	0	0	1	1	1	2	4	5	7	11	16
	600	0	0	0	1	1	1	1	3	4	5	9	13
700	0	0	0	0	1	1	1	3	4	5	8	11	
750	0	0	0	0	1	1	1	2	3	4	7	11	
FEP, FEPB, PFA, PFAH, TFE	14	11	20	33	58	79	131	188	290	389	502	790	1142
	12	8	15	24	42	58	96	137	212	284	366	577	834
	10	6	10	17	30	41	69	98	152	204	263	414	598
	8	3	6	10	17	24	39	56	87	117	150	237	343
	6	2	4	7	12	17	28	40	62	83	107	169	244
	4	1	3	5	8	12	19	28	43	58	75	118	170
	3	1	2	4	7	10	16	23	36	48	62	98	142
	2	1	1	3	6	8	13	19	30	40	51	81	117
PFA, PFAH, TFE	1	1	1	2	4	5	9	13	20	28	36	56	81
	1/0	1	1	1	3	4	8	11	17	23	30	47	68
	2/0	0	1	1	3	4	6	9	14	19	24	39	56
	3/0	0	1	1	2	3	5	7	12	16	20	32	46
Z	4/0	0	1	1	1	2	4	6	9	13	16	26	38
	14	13	24	40	70	95	158	226	350	469	605	952	1376
	12	9	17	28	49	68	112	160	248	333	429	675	976
	10	6	10	17	30	41	69	98	152	204	263	414	598
	8	3	6	11	19	26	43	62	96	129	166	261	378
	6	2	4	7	13	18	30	43	67	90	116	184	265
	4	1	3	5	9	12	21	30	46	62	80	126	183
	3	1	2	4	6	9	15	22	34	45	58	92	133
	2	1	1	3	5	7	12	18	28	38	49	77	111
	1	1	1	2	4	6	10	14	23	30	39	62	90
XHH, XHHW, XHHW-2, ZW	14	8	14	24	42	57	94	135	209	280	361	568	822
	12	6	11	18	32	44	72	103	160	215	277	436	631
	10	4	8	13	24	32	54	77	119	160	206	325	470
	8	2	4	7	13	18	30	43	66	89	115	181	261
	6	1	3	5	10	13	22	32	49	66	85	134	193
	4	1	2	4	7	9	16	23	35	48	61	97	140
	3	1	1	3	6	8	13	19	30	40	52	82	118
	2	1	1	3	5	7	11	16	25	34	44	69	99
XHH, XHHW, XHHW-2	1	1	1	1	3	5	8	12	19	25	32	51	74
	1/0	1	1	1	3	4	7	10	16	21	27	43	62
	2/0	0	1	1	2	3	6	8	13	17	23	36	52
	3/0	0	1	1	1	3	5	7	11	14	19	30	43
	4/0	0	1	1	1	2	4	6	9	12	15	24	35
	250	0	0	1	1	1	3	5	7	10	13	20	29
	300	0	0	1	1	1	3	4	6	8	11	17	25
	350	0	0	1	1	1	2	3	5	7	9	15	22
	400	0	0	0	1	1	1	3	5	6	8	13	19
	500	0	0	0	1	1	1	2	4	5	7	11	16
	600	0	0	0	1	1	1	1	3	4	5	9	13
	700	0	0	0	0	1	1	1	3	4	5	8	11
750	0	0	0	0	1	1	1	2	3	4	7	11	

*Types RHH, RHW, and RHW-2 without outer covering.

See Ugly's page 141 for Trade Size/Metric Designator conversion.

Source: NFPA 70®, National Electrical Code®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.11, as modified.



MAXIMUM NUMBER OF CONDUCTORS IN RIGID PVC CONDUIT, SCHEDULE 80

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
RHH, RHW, RHW-2	14	3	5	9	17	23	39	56	88	118	153	243	349
	12	2	4	7	14	19	32	46	73	98	127	202	290
	10	1	3	6	11	15	26	37	59	79	103	163	234
	8	1	1	3	6	8	13	19	31	41	54	85	122
	6	1	1	2	4	6	11	16	24	33	43	68	98
	4	1	1	1	3	5	8	12	19	26	33	53	77
	3	0	1	1	3	4	7	11	17	23	29	47	67
	2	0	1	1	3	4	6	9	14	20	25	41	58
	1	0	1	1	1	2	4	6	9	13	17	27	38
	1/0	0	0	1	1	1	3	5	8	11	15	23	33
	2/0	0	0	1	1	1	3	4	7	10	13	20	29
	3/0	0	0	1	1	1	3	4	6	8	11	17	25
	4/0	0	0	0	1	1	2	3	5	7	9	15	21
	250	0	0	0	1	1	1	2	4	5	7	11	16
	300	0	0	0	1	1	1	2	3	5	6	10	14
	350	0	0	0	1	1	1	3	4	5	9	13	19
	400	0	0	0	0	1	1	3	4	5	8	12	17
	500	0	0	0	0	1	1	2	3	4	7	10	14
	600	0	0	0	0	1	1	1	2	3	5	8	11
	700	0	0	0	0	1	1	1	2	3	5	7	10
	750	0	0	0	0	0	1	1	2	3	5	7	10
TW, THHW, THW, THW-2	14	6	11	19	35	49	82	118	185	250	324	514	736
	12	4	9	15	27	38	63	91	142	192	248	394	565
	10	3	6	11	20	28	47	68	106	143	185	294	421
	8	1	3	6	11	15	26	37	59	79	103	163	234
RHH*, RHW*, RHW-2*	14	4	8	13	23	32	55	79	123	166	215	341	490
	12	3	6	10	19	26	44	63	99	133	173	274	394
	10	2	5	8	15	20	34	49	77	104	135	214	307
	8	1	3	5	9	12	20	29	46	62	81	128	184
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	6	1	1	3	7	9	16	22	35	48	62	98	141
	4	1	1	3	5	7	12	17	26	35	46	73	105
	3	1	1	2	4	6	10	14	22	30	39	63	90
	2	1	1	1	3	5	8	12	19	26	33	53	77
	1	0	1	1	2	3	6	8	13	18	23	37	54
	1/0	0	1	1	1	3	5	7	11	15	20	32	46
	2/0	0	1	1	1	2	4	6	10	13	17	27	39
	3/0	0	0	1	1	1	3	5	8	11	14	23	33
	4/0	0	0	1	1	1	3	4	7	9	12	19	27
	250	0	0	0	1	1	2	3	5	7	9	15	22
	300	0	0	0	1	1	3	5	6	8	13	19	27
	350	0	0	0	1	1	2	4	6	7	12	17	25
	400	0	0	0	1	1	1	2	4	5	7	10	15
	500	0	0	0	1	1	1	3	4	5	9	13	19
	600	0	0	0	0	1	1	2	3	4	7	10	14
	700	0	0	0	0	1	1	2	3	4	6	9	13
	750	0	0	0	0	1	1	1	2	3	4	6	9
THHN, THWN, THWN-2	14	9	17	28	51	70	118	170	265	358	464	736	1055
	12	6	12	20	37	51	86	124	193	261	338	537	770
	10	4	7	13	23	32	54	78	122	164	213	338	485
	8	2	4	7	13	18	31	45	70	95	123	195	279
	6	1	3	5	9	13	22	32	51	68	89	141	202
	4	1	1	3	6	8	14	20	31	42	54	86	124
	3	1	1	3	5	7	12	17	26	35	46	73	105
	2	1	1	2	4	6	10	14	22	30	39	61	88
	1	0	1	1	3	4	7	10	16	22	29	45	65

(continued on next page)



MAXIMUM NUMBER OF CONDUCTORS IN RIGID PVC CONDUIT, SCHEDULE 80

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
THHN, THWN, THWN-2	1/0	0	1	1	2	3	6	9	14	18	24	30	55
	2/0	0	1	1	1	3	5	7	11	15	20	32	46
	3/0	0	1	1	1	2	4	6	9	13	17	26	38
	4/0	0	0	1	1	1	3	5	8	10	14	22	31
	250	0	0	1	1	1	3	4	6	8	11	18	25
	300	0	0	0	1	1	2	3	5	7	9	15	22
	350	0	0	0	1	1	1	3	5	6	8	13	19
	400	0	0	0	1	1	1	3	4	6	8	12	17
	500	0	0	0	1	1	1	2	3	5	6	10	14
	600	0	0	0	0	1	1	1	3	4	5	8	12
700	0	0	0	0	1	1	1	2	3	4	7	10	
750	0	0	0	0	1	1	1	2	3	4	7	9	
FER, FEPB, PFA, PFAH, TFE	14	8	16	27	49	68	115	164	257	347	450	714	1024
	12	6	12	20	36	50	84	120	188	253	328	521	747
	10	4	8	14	26	36	60	86	135	182	235	374	538
	8	2	5	8	15	20	34	49	77	104	135	214	307
	6	1	3	6	10	14	24	35	55	74	96	152	218
	4	1	2	4	7	10	17	24	38	52	67	106	153
	3	1	1	3	6	8	14	20	32	43	56	89	127
	2	1	1	3	5	7	12	17	26	35	46	73	105
	1	1	1	1	3	5	8	11	18	25	32	51	73
	1/0	0	1	1	3	4	7	10	15	20	27	42	61
2/0	0	1	1	2	3	5	8	12	17	22	35	50	
3/0	0	1	1	1	2	4	6	10	14	18	29	41	
4/0	0	0	1	1	1	4	5	8	11	15	24	34	
Z	14	10	19	33	59	82	138	198	310	418	542	860	1233
	12	7	14	23	42	58	98	141	220	297	385	610	875
	10	4	8	14	26	36	60	86	135	182	235	374	536
	8	3	5	9	16	22	38	54	85	115	149	236	339
	6	1	4	6	11	16	28	38	60	81	104	166	238
	4	1	2	4	8	11	18	26	41	55	72	114	164
	3	1	1	3	5	8	13	19	30	40	52	83	119
	2	1	1	2	5	6	11	16	25	33	43	69	99
	1	1	1	1	4	5	9	13	20	27	35	56	80
	1/0	0	1	1	2	3	5	8	12	17	22	35	50
2/0	0	1	1	1	2	3	5	8	11	15	24	34	
3/0	0	1	1	1	1	2	4	6	10	14	18	29	
4/0	0	0	1	1	1	4	5	8	11	15	24	34	
XHH, XHHW, XHHW-2, ZW	14	6	11	19	35	49	82	118	185	250	324	514	736
	12	4	9	15	27	38	63	91	142	192	248	394	565
	10	3	6	11	20	28	47	68	106	143	185	294	421
	8	1	3	6	11	15	26	37	59	79	103	163	234
	6	1	2	4	8	11	19	28	43	59	76	121	173
	4	1	1	3	6	8	14	20	31	42	55	87	125
	3	1	1	3	5	7	12	17	26	36	47	74	106
	2	1	1	2	4	6	10	14	22	30	39	62	89
	1	0	1	1	3	4	7	10	16	22	29	46	66
	1/0	0	1	1	2	3	6	9	14	19	24	39	56
2/0	0	1	1	1	3	5	7	11	16	20	32	46	
3/0	0	1	1	1	2	4	6	9	13	17	27	38	
4/0	0	0	1	1	1	3	5	8	11	14	22	32	
250	0	0	1	1	1	3	4	6	9	11	18	26	
300	0	0	1	1	1	2	3	5	7	10	15	22	
350	0	0	0	1	1	1	3	5	6	8	14	20	
400	0	0	0	1	1	1	3	4	6	7	12	17	
500	0	0	0	1	1	1	2	3	5	6	10	14	
600	0	0	0	0	1	1	1	3	4	5	8	11	
700	0	0	0	0	1	1	1	2	3	4	7	10	
750	0	0	0	0	1	1	1	2	3	4	6	9	

*Types RHH, RHW, and RHW-2 without outer covering.

See *Ugly's* page 141 for Trade Size/Metric Designator conversion.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.10, as modified.



MAXIMUM NUMBER OF CONDUCTORS IN RIGID METAL CONDUIT

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
RHH, RHW, RHW-2	14	4	7	12	21	28	46	66	102	136	176	276	398
	12	3	6	10	17	23	38	55	85	113	146	229	330
	10	3	5	8	14	19	31	44	68	91	118	185	267
	8	1	2	4	7	10	16	23	36	48	61	97	139
	6	1	1	3	6	8	13	18	29	38	49	77	112
	4	1	1	2	4	6	10	14	22	30	38	60	87
	3	1	1	2	4	5	9	12	19	26	34	53	76
	2	1	1	1	3	4	7	11	17	23	29	46	66
	1	0	1	1	1	3	5	7	11	15	19	30	44
	1/0	0	1	1	1	2	4	6	10	13	17	26	38
	2/0	0	1	1	1	2	4	5	8	11	14	23	33
	3/0	0	0	1	1	1	3	4	7	10	12	20	28
	4/0	0	0	1	1	1	3	4	6	8	11	17	24
	250	0	0	0	1	1	3	4	6	8	11	18	26
	300	0	0	0	1	1	2	4	5	7	11	16	23
	350	0	0	0	1	1	2	4	5	6	10	15	22
	400	0	0	0	1	1	1	3	4	6	9	13	19
	500	0	0	0	1	1	1	3	4	5	8	11	16
	600	0	0	0	1	1	1	2	3	4	6	9	13
	700	0	0	0	1	1	1	1	3	3	5	8	11
	750	0	0	0	0	1	1	1	3	3	5	8	11
TW, THHW, THW, THW-2	14	9	15	25	44	59	98	140	215	288	370	581	839
	12	7	12	19	33	45	75	107	165	221	284	446	644
	10	5	9	14	25	34	56	80	123	164	212	332	480
	8	3	5	8	14	19	31	44	68	91	118	185	267
RHH*, RHW*, RHW-2*	14	6	10	17	29	39	65	93	143	191	246	387	558
	12	5	8	13	23	32	52	75	115	154	198	311	448
	10	3	6	10	18	25	41	59	90	120	154	242	350
	8	1	4	6	11	15	24	35	54	72	92	145	209
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	6	1	3	5	8	11	18	27	41	55	71	111	160
	4	1	1	3	6	8	14	20	31	41	53	83	120
	3	1	1	3	5	7	12	17	26	35	45	71	103
	2	1	1	2	4	6	10	14	22	30	38	60	87
	1	1	1	1	3	4	7	10	15	21	27	42	61
	1/0	0	1	1	3	3	6	8	13	18	23	36	52
	2/0	0	1	1	2	3	5	7	11	15	19	31	44
	3/0	0	1	1	1	2	4	6	9	13	16	26	37
	4/0	0	0	1	1	1	3	5	8	10	14	21	31
	250	0	0	1	1	1	3	4	6	8	11	17	25
	300	0	0	1	1	1	2	3	5	7	9	15	22
	350	0	0	0	1	1	1	3	5	6	8	13	19
	400	0	0	0	1	1	1	3	4	6	7	12	17
	500	0	0	0	1	1	1	2	3	5	6	10	14
	600	0	0	0	1	1	1	1	3	4	5	8	12
	700	0	0	0	1	1	1	1	2	3	4	7	10
	750	0	0	0	0	1	1	1	2	3	4	7	10
THHN, THWN, THWN-2	14	13	22	36	63	85	140	200	309	412	531	833	1202
	12	9	16	26	46	62	102	146	225	301	387	608	877
	10	6	10	17	29	39	64	92	142	189	244	383	552
	8	3	6	9	16	22	37	53	82	109	140	221	318
	6	2	4	7	12	16	27	38	59	79	101	159	230
	4	1	2	4	7	10	16	23	36	48	62	98	141
	3	1	1	3	6	8	14	20	31	41	53	83	120
	2	1	1	3	5	7	11	17	26	34	44	70	100
	1	1	1	1	4	5	8	12	19	25	33	51	74

(continued on next page)



MAXIMUM NUMBER OF CONDUCTORS IN RIGID METAL CONDUIT

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches												
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	
THHN, THWN, THWN-2	1/0	1	1	1	3	4	7	10	16	21	27	43	63	
	2/0	0	1	1	2	3	6	9	13	18	23	36	52	
	3/0	0	1	1	1	3	5	7	11	15	19	30	43	
	4/0	0	1	1	1	2	4	6	9	12	16	25	36	
	250	0	0	1	1	1	3	5	7	10	13	20	29	
	300	0	0	1	1	1	3	4	6	8	11	17	25	
	350	0	0	1	1	1	2	3	5	7	10	15	22	
	400	0	0	1	1	1	2	3	5	7	10	15	22	
	500	0	0	0	1	1	1	2	3	4	5	7	11	16
	600	0	0	0	1	1	1	1	3	4	6	9	13	
700	0	0	0	1	1	1	1	3	4	5	8	11		
750	0	0	0	0	1	1	1	3	4	5	7	11		
FEP, FEPB, PFA, PFAH, TFE	14	12	22	35	61	83	136	194	300	400	515	808	1166	
	12	9	16	26	44	60	99	142	219	292	376	590	851	
	10	6	11	18	32	43	71	102	157	209	269	423	610	
	8	3	6	10	18	25	41	58	90	120	154	242	350	
	6	2	4	7	13	17	29	41	64	85	110	172	249	
	4	1	3	5	9	12	20	29	44	59	77	120	174	
	3	1	2	4	7	10	17	24	37	50	64	100	145	
	2	1	1	3	6	8	14	20	31	41	53	83	120	
PFA, PFAH, TFE	1	1	1	2	4	6	9	14	21	28	37	57	83	
	1/0	1	1	1	3	5	8	11	18	24	30	48	69	
	3/0	1	1	1	3	4	6	9	14	19	25	40	57	
	4/0	0	1	1	2	3	5	8	12	16	21	33	47	
Z	14	15	26	42	73	100	164	234	361	482	621	974	1405	
	12	10	18	30	52	71	116	166	256	342	440	691	997	
	10	6	11	18	32	43	71	102	157	209	269	423	610	
	8	4	7	11	20	27	45	64	99	132	170	267	386	
	6	3	5	8	14	19	31	45	69	93	120	188	271	
	4	1	3	5	9	13	22	31	48	64	82	129	186	
	3	1	2	4	7	9	16	22	35	47	60	94	136	
	2	1	1	3	6	8	13	19	29	39	50	78	113	
	1	1	1	2	5	6	10	15	23	31	40	63	92	
	XHH, XHHW, XHHW-2, ZW	14	9	15	25	44	59	98	140	215	288	370	581	839
12		7	12	19	33	45	75	107	165	221	284	446	644	
10		5	9	14	25	34	56	80	123	164	212	332	480	
8		3	5	8	14	19	31	44	68	91	118	185	267	
6		1	3	6	10	14	23	33	51	68	87	137	197	
4		1	2	4	7	10	16	24	37	49	63	99	143	
3		1	1	3	6	8	14	20	31	41	53	84	121	
2		1	1	3	5	7	12	17	26	35	45	70	101	
XHH, XHHW, XHHW-2	1	1	1	1	4	5	9	12	19	26	33	52	76	
	1/0	1	1	1	3	4	7	10	16	22	28	44	64	
	2/0	0	1	1	2	3	6	9	13	18	23	37	53	
	3/0	0	1	1	1	3	5	7	11	15	19	30	44	
	4/0	0	1	1	1	2	4	6	9	12	16	25	36	
	250	0	0	1	1	1	3	5	7	10	13	20	30	
	300	0	0	1	1	1	3	4	6	9	11	18	25	
	350	0	0	1	1	1	2	3	6	7	10	15	22	
	400	0	0	1	1	1	2	3	5	7	9	14	20	
	500	0	0	0	1	1	1	2	4	5	7	11	16	
600	0	0	0	1	1	1	1	3	4	6	9	13		
700	0	0	0	1	1	1	1	3	4	5	8	11		
750	0	0	0	0	1	1	1	3	4	5	7	11		

*Types RHH, RHW, and RHW-2 without outer covering.

See *Ugly's* page 141 for Trade Size/Metric Designator conversion.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.9, as modified.



MAXIMUM NUMBER OF CONDUCTORS IN FLEXIBLE METAL CONDUIT

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches															
		1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2						
RHH, RHW, RHW-2	14	1	4	7	11	17	25	44	67	96	131	171					
	12	1	3	6	9	14	21	37	55	80	109	142					
	10	1	3	5	7	11	17	30	45	64	88	115					
	8	0	1	2	4	6	9	15	23	34	46	60					
	6	0	1	1	3	5	7	12	19	27	37	48					
	4	0	1	1	2	4	5	10	14	21	29	37					
	3	0	1	1	1	3	5	8	13	18	25	33					
	2	0	1	1	1	3	4	7	11	16	22	28					
	1	0	0	1	1	1	2	5	7	10	14	19					
	1/0	0	0	1	1	1	2	4	6	9	12	16					
	2/0	0	0	1	1	1	1	3	5	8	11	14					
	3/0	0	0	0	1	1	1	3	5	7	9	12					
	4/0	0	0	0	1	1	1	2	4	6	8	10					
	250	0	0	0	0	1	1	1	3	4	6	8					
	300	0	0	0	0	1	1	1	2	4	5	7					
	350	0	0	0	0	1	1	1	2	3	5	6					
	400	0	0	0	0	0	1	1	1	3	4	6					
500	0	0	0	0	0	1	1	1	3	4	5						
600	0	0	0	0	0	1	1	1	2	3	4						
700	0	0	0	0	0	0	1	1	1	3	3						
750	0	0	0	0	0	0	1	1	1	2	3						
TW, THHW, THW, THW-2	14	3	9	15	23	36	53	94	141	203	277	361					
	12	2	7	11	18	28	41	72	108	156	212	277					
	10	1	5	8	13	21	30	54	81	116	158	207					
	8	1	3	5	7	11	17	30	45	64	88	115					
RHH*, RHW*, RHW-2*	14	1	6	10	15	24	35	62	94	135	184	240					
	12	1	5	8	12	19	28	50	75	108	148	193					
	10	1	4	6	10	15	22	39	59	85	115	151					
	8	1	1	4	6	9	13	23	35	51	69	90					
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	6	1	1	3	4	7	10	18	27	39	53	69					
	4	0	1	1	3	5	7	13	20	29	39	51					
	3	0	1	1	3	4	6	11	17	25	34	44					
	2	0	1	1	2	4	5	10	14	21	29	37					
	1	0	1	1	1	2	4	7	10	15	20	26					
	1/0	0	0	1	1	1	3	6	9	12	17	22					
	2/0	0	0	1	1	1	3	5	7	10	14	19					
	3/0	0	0	1	1	1	2	4	6	9	12	16					
	4/0	0	0	0	1	1	1	3	5	7	10	13					
	250	0	0	0	1	1	1	3	4	6	8	11					
	300	0	0	0	1	1	1	2	3	5	7	9					
	350	0	0	0	0	1	1	1	3	4	6	8					
	400	0	0	0	0	1	1	1	3	4	6	7					
	500	0	0	0	0	1	1	1	2	3	5	6					
	600	0	0	0	0	0	1	1	1	3	4	5					
	700	0	0	0	0	0	1	1	1	2	3	4					
	750	0	0	0	0	0	1	1	1	2	3	4					
THHN, THWN, THWN-2	14	4	13	22	33	52	76	134	202	291	396	518					
	12	3	9	16	24	38	56	98	147	212	289	378					
	10	1	6	10	15	24	35	62	93	134	182	238					
	8	1	3	6	9	14	20	35	53	77	105	137					
	6	1	2	4	6	10	14	25	38	55	76	99					
	4	0	1	2	4	6	9	16	24	34	46	61					
	3	0	1	1	3	5	7	13	20	29	39	51					
	2	0	1	1	3	4	6	11	17	24	33	43					
	1	0	1	1	1	3	4	8	12	18	24	32					

(continued on next page)



MAXIMUM NUMBER OF CONDUCTORS IN FLEXIBLE METAL CONDUIT

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2		
THHN, THWN, THWN-2	1/0	0	1	1	1	2	4	7	10	15	20	27	
	2/0	0	0	1	1	1	3	6	9	12	17	22	
	3/0	0	0	1	1	1	2	5	7	10	14	18	
	4/0	0	0	1	1	1	1	4	6	8	12	15	
	250	0	0	0	1	1	1	3	5	7	9	12	
	300	0	0	0	1	1	1	3	4	6	8	11	
	350	0	0	0	1	1	1	2	3	5	7	9	
	400	0	0	0	0	1	1	1	3	5	6	8	
	500	0	0	0	0	1	1	1	2	4	5	7	
	600	0	0	0	0	0	1	1	1	3	4	5	
700	0	0	0	0	0	1	1	1	3	4	5		
750	0	0	0	0	0	1	1	1	2	3	4		
FEP, FEPB, PFA, PFAH, TFE	14	4	12	21	32	51	74	130	196	282	385	502	
	12	3	9	15	24	37	54	95	143	206	281	367	
	10	2	6	11	17	26	39	68	103	148	201	263	
	8	1	4	6	10	15	22	39	59	85	115	151	
	6	1	2	4	7	11	16	28	42	60	82	107	
	4	1	1	3	5	7	11	19	29	42	57	75	
	3	0	1	2	4	6	9	16	24	35	48	62	
	2	0	1	1	3	5	7	13	20	29	39	51	
	PFA, PFAH, TFE	1	0	1	1	2	3	5	9	14	20	27	36
		1/0	0	1	1	1	3	4	8	11	17	23	30
2/0		0	1	1	1	2	3	6	9	14	19	24	
3/0		0	0	1	1	1	3	5	8	11	15	20	
Z	14	5	15	25	39	61	89	157	236	340	463	605	
	12	4	11	18	28	43	63	111	168	241	329	429	
	10	2	6	11	17	26	39	68	103	148	201	263	
	8	1	4	7	11	17	24	43	65	93	127	166	
	6	1	3	5	7	12	17	30	45	65	89	117	
	4	1	1	3	5	8	12	21	31	45	61	80	
	3	0	1	2	4	6	8	15	23	33	45	58	
	2	0	1	1	3	5	7	12	19	27	37	49	
	1	0	1	1	2	4	6	10	15	22	30	39	
	XHH, XHHW, XHHW-2, ZW	14	3	9	15	23	36	53	94	141	203	277	361
12		2	7	11	18	28	41	72	108	156	212	277	
10		1	5	8	13	21	30	54	81	116	158	207	
8		1	3	5	7	11	17	30	45	64	88	115	
6		1	1	3	5	8	12	22	33	48	65	85	
4		0	1	2	4	6	9	16	24	34	47	61	
3		0	1	1	3	5	7	13	20	29	40	52	
2		0	1	1	3	4	6	11	17	24	33	44	
XHH, XHHW, XHHW-2		1	0	1	1	1	3	5	8	13	18	25	32
		1/0	0	1	1	1	2	4	7	10	15	21	27
	2/0	0	0	1	1	2	3	6	9	13	17	23	
	3/0	0	0	1	1	1	3	5	7	10	14	19	
	4/0	0	0	1	1	1	2	4	6	9	12	15	
	250	0	0	0	1	1	1	3	5	7	10	13	
	300	0	0	0	1	1	1	3	4	6	8	11	
	350	0	0	0	1	1	1	2	4	5	7	9	
	400	0	0	0	0	1	1	1	3	5	6	8	
	500	0	0	0	0	1	1	1	3	4	5	7	
600	0	0	0	0	0	1	1	1	3	4	5		
700	0	0	0	0	0	1	1	1	3	4	5		
750	0	0	0	0	0	1	1	1	2	3	4		

*Types RHH, RHW, and RHW-2 without outer covering.

See *Ugly's* page 141 for Trade Size/Metric Designator conversion.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.3, as modified.



MAXIMUM NUMBER OF CONDUCTORS IN LIQUIDTIGHT FLEXIBLE METAL CONDUIT

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches											
		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
RHH, RHW, RHW-2	14	2	4	7	12	21	27	44	66	102	133	173	
	12	1	3	6	10	17	22	36	55	84	110	144	
	10	1	3	5	8	14	18	29	44	68	89	116	
	8	1	1	2	4	7	9	15	23	36	46	61	
	6	1	1	1	3	6	7	12	18	28	37	48	
	4	0	1	1	2	4	6	9	14	22	29	38	
	3	0	1	1	1	4	5	8	13	19	25	33	
	2	0	0	1	1	3	4	7	11	17	22	29	
	1	0	0	1	1	1	3	5	7	11	14	19	
	1/0	0	0	1	1	1	2	4	6	10	13	16	
	2/0	0	0	1	1	1	1	3	5	8	11	14	
	3/0	0	0	0	1	1	1	3	4	7	9	12	
	4/0	0	0	0	1	1	1	2	4	6	8	10	
	250	0	0	0	0	1	1	3	4	6	8	10	
	300	0	0	0	0	1	1	2	4	5	7	9	
	350	0	0	0	0	1	1	2	3	5	6	7	
	400	0	0	0	0	1	1	1	3	4	6	7	
	500	0	0	0	0	1	1	1	3	4	5	6	
	600	0	0	0	0	1	1	1	2	3	4	5	
	700	0	0	0	0	0	0	1	1	2	3	3	
	750	0	0	0	0	0	0	1	1	2	3	3	
TW, THHW, THW, THW-2	14	5	9	15	25	44	57	93	140	215	280	365	
	12	4	7	12	19	33	43	71	108	165	215	280	
	10	3	5	9	14	25	32	53	80	123	160	209	
	8	1	3	5	8	14	18	29	44	68	89	116	
RHH*, RHW*, RHW-2*	14	3	6	10	16	29	38	62	93	143	186	243	
	12	3	5	8	13	23	30	50	75	115	149	195	
	10	1	3	6	10	18	23	39	58	89	117	152	
	8	1	1	4	6	11	14	23	35	53	70	91	
RHH*, RHW*, RHW-2*, TW, THW, THHW, THW-2	6	1	1	3	5	8	11	18	27	41	53	70	
	4	1	1	1	3	6	8	13	20	30	40	52	
	3	1	1	1	3	5	7	11	17	26	34	44	
	2	0	1	1	2	4	6	9	14	22	29	38	
	1	0	1	1	1	3	4	7	10	15	20	26	
	1/0	0	0	1	1	2	3	6	8	13	17	23	
	2/0	0	0	1	1	2	3	5	7	11	15	19	
	3/0	0	0	1	1	1	2	4	6	9	12	16	
	4/0	0	0	0	1	1	1	3	5	8	10	13	
	250	0	0	0	1	1	1	3	4	6	8	11	
	300	0	0	0	1	1	1	2	3	5	7	9	
	350	0	0	0	0	1	1	1	3	5	6	8	
	400	0	0	0	0	1	1	1	3	4	6	7	
	500	0	0	0	0	1	1	1	2	3	5	6	
	600	0	0	0	0	1	1	1	1	3	4	5	
	700	0	0	0	0	0	1	1	1	2	3	4	
	750	0	0	0	0	0	1	1	1	2	3	4	
THHN, THWN, THWN-2	14	8	13	22	36	63	81	134	201	308	401	523	
	12	5	9	16	26	46	59	97	146	225	292	381	
	10	3	6	10	16	29	37	61	92	141	184	240	
	8	1	3	6	9	16	21	35	53	81	106	138	
	6	1	2	4	7	12	15	25	38	59	76	100	
	4	1	1	2	4	7	9	15	23	36	47	61	
	3	1	1	1	3	6	8	13	20	30	40	52	
	2	1	1	1	3	5	7	11	17	26	33	44	
	1	0	1	1	1	4	5	8	12	19	25	32	

(continued on next page)

**MAXIMUM NUMBER OF CONDUCTORS
IN LIQUIDTIGHT FLEXIBLE METAL CONDUIT**

Type Letters	Cond. Size AWG/kcmil	Trade Sizes in Inches																																																																																																																																																										
		1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4																																																																																																																																													
THHN, THWN, THWN-2	1/0	0	1	1	1	3	4	7	10	16	21	27	2/0	0	0	1	1	2	3	6	8	13	17	23	3/0	0	0	1	1	1	3	5	7	11	14	19	4/0	0	0	1	1	1	2	4	6	9	12	15	250	0	0	0	1	1	1	3	5	7	10	12	300	0	0	0	1	1	1	3	4	6	8	11	350	0	0	0	1	1	1	2	3	5	7	9	400	0	0	0	0	1	1	1	3	5	7	8	500	0	0	0	0	1	1	1	2	4	5	7	600	0	0	0	0	1	1	1	1	3	4	6	700	0	0	0	0	1	1	1	1	3	4	5	750	0	0	0	0	0	1	1	1	3	3	5												
FEP, FEPB, PFA, PFAH, TFE	14	7	12	21	35	61	79	130	195	299	389	507	12	5	9	15	25	44	58	94	142	218	284	370	10	4	6	11	18	32	41	68	102	156	203	266	8	1	3	6	10	18	23	39	58	89	117	152	6	1	2	4	7	13	17	27	41	64	83	108	4	1	1	3	5	9	12	19	29	44	58	75	3	1	1	2	4	7	10	16	24	37	48	63	2	1	1	1	3	6	8	13	20	30	40	52																																																												
PFA, PFAH, TFE	1	0	1	1	2	4	5	9	14	21	28	36	1/0	0	1	1	1	3	4	7	11	18	23	30	2/0	0	1	1	1	3	4	6	9	14	19	25	3/0	0	0	1	1	2	3	5	8	12	16	20	4/0	0	0	1	1	1	2	4	6	10	13	17																																																																																																
Z	14	9	15	26	42	73	95	156	235	360	469	611	12	6	10	18	30	52	67	111	167	255	332	434	10	4	6	11	18	32	41	68	102	156	203	266	8	2	4	7	11	20	26	43	64	99	129	168	6	1	3	5	8	14	18	30	45	69	90	118	4	1	1	3	5	9	12	20	31	48	62	81	3	1	1	2	4	7	9	15	23	35	45	59	2	1	1	1	3	6	7	12	19	29	38	49	1	1	1	1	2	5	6	10	15	23	30	40																																																
XHH, XHHW, XHHW-2, ZW	14	5	9	15	25	44	57	93	140	215	280	365	12	4	7	12	19	33	43	71	108	165	215	280	10	3	5	9	14	25	32	53	80	123	160	209	8	1	3	5	8	14	18	29	44	68	89	116	6	1	1	3	6	10	13	22	33	50	66	86	4	1	1	2	4	7	9	16	24	36	48	62	3	1	1	1	3	6	8	13	20	31	40	52	2	1	1	1	3	5	7	11	17	26	34	44																																																												
XHH, XHHW, XHHW-2	1	0	1	1	1	4	5	8	12	19	25	33	1/0	0	1	1	1	3	4	7	10	16	21	28	2/0	0	0	1	1	2	3	6	9	13	17	23	3/0	0	0	1	1	1	3	5	7	11	14	19	4/0	0	0	1	1	1	2	4	6	9	12	16	250	0	0	0	1	1	1	3	5	7	10	13	300	0	0	0	1	1	1	3	4	6	8	11	350	0	0	0	1	1	1	2	3	5	7	10	400	0	0	0	1	1	1	1	3	5	6	8	500	0	0	0	0	1	1	1	2	4	5	7	600	0	0	0	0	1	1	1	1	3	4	6	700	0	0	0	0	1	1	1	1	3	4	5	750	0	0	0	0	0	1	1	1	3	3	5

*Types RHH, RHW, and RHW-2 without outer covering.
See *Ugly's* page 141 for Trade Size/Metric Designator conversion.
Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Annex C, Table C.8, as modified.



DIMENSIONS OF INSULATED CONDUCTORS AND FIXTURE WIRES

Type	Size	Approx. Area Sq. In.	Type	Size	Approx. Area Sq. In.
RFH-2	18	0.0145	RHH*, RHW*, XF	10	0.0333
FFH-2, RFHH-2	16	0.0172	RHW-2*, XFF		
RHW-2, RHH	14	0.0293	RHH*, RHW*, RHW-2*	8	0.0556
RHW	12	0.0353	TW, THW	6	0.0726
	10	0.0437	THHW	4	0.0973
	8	0.0835	THW-2	3	0.1134
	6	0.1041	RHH*	2	0.1333
	4	0.1333	RHW*	1	0.1901
	3	0.1521	RHW-2*	1/0	0.2223
	2	0.1750		2/0	0.2624
	1	0.2660		3/0	0.3117
	1/0	0.3039		4/0	0.3718
	2/0	0.3505		250	0.4596
	3/0	0.4072		300	0.5281
	4/0	0.4754		350	0.5958
	250	0.6291		400	0.6619
	300	0.7088		500	0.7901
	350	0.7870		600	0.9729
	400	0.8626		700	1.1010
	500	1.0082		750	1.1652
	600	1.2135		800	1.2272
	700	1.3561		900	1.3561
	750	1.4272		1000	1.4784
	800	1.4957		1250	1.8602
	900	1.6377		1500	2.1695
	1000	1.7719		1750	2.4773
	1250	2.3479		2000	2.7818
	1500	2.6938	TFN	18	0.0055
	1750	3.0357	TFFN	16	0.0072
	2000	3.3719	THHN	14	0.0097
SF-2, SFF-2	18	0.0115	THWN	12	0.0133
	16	0.0139	THWN-2	10	0.0211
	14	0.0172		8	0.0366
SF-1, SFF-1	18	0.0065		6	0.0507
RFH-1, XF, XFF	18	0.0088		4	0.0824
TF, TFF, XF, XFF	16	0.0109		3	0.0973
TW, XF, XFF,	14	0.0139		2	0.1158
THHW, THW, THW-2				1	0.1562
TW, THHW,	12	0.0181		1/0	0.1855
THW, THW-2	10	0.0243		2/0	0.2223
	8	0.0437		3/0	0.2679
				4/0	0.3237
RHH*, RHW*, RHW-2*	14	0.0209		250	0.3970
RHH*, RHW*, RHW-2*,	12	0.0260		300	0.4608
XF, XFF				350	0.5242
				400	0.5863
				500	0.7073
				600	0.8676
				700	0.9887



DIMENSIONS OF INSULATED CONDUCTORS AND FIXTURE WIRES

Type	Size	Approx. Area Sq. In.	Type	Size	Approx. Area Sq. In.
THHN	750	1.0496	XHHW	300	0.4536
THWN	800	1.1085	XHHW-2	350	0.5166
THWN-2	900	1.2311	XHH	400	0.5782
	1000	1.3478		500	0.6984
PF, PGFF, PGF, PFF,	18	0.0058		600	0.8709
PTF, PAF, PTFE, PAFF	16	0.0075		700	0.9923
PF, PGFF, PGF, PFF,	14	0.0100		750	1.0532
PTF, PAF, PTFE, PAFF				800	1.1122
TFE, FEP, PFA				900	1.2351
FEPB, PFAH				1000	1.3519
				1250	1.7180
TFE, FEP,	12	0.0137		1500	2.0157
PFA, FEPB,	10	0.0191		1750	2.3127
PFAH	8	0.0333		2000	2.6073
	6	0.0468	KF-2	18	0.0031
	4	0.0670	KFF-2	16	0.0044
	3	0.0804		14	0.0064
	2	0.0973		12	0.0093
	1	0.1399		10	0.0139
TFE, PFAH	1	0.1399	KF-1	18	0.0031
TFE,	1/0	0.1676	KFF-1	16	0.0037
PFA,	2/0	0.2027		14	0.0055
PFAH, Z	3/0	0.2463		12	0.0083
	4/0	0.3000		10	0.0127
ZF, ZFF	18	0.0045			
	16	0.0061			
Z, ZF, ZFF	14	0.0083			
Z	12	0.0117			
	10	0.0191			
	8	0.0302			
	6	0.0430			
	4	0.0625			
	3	0.0855			
	2	0.1029			
	1	0.1269			
XHHW, ZW	14	0.0139			
XHHW-2	12	0.0181			
XHH	10	0.0243			
	8	0.0437			
	6	0.0590			
	4	0.0814			
	3	0.0962			
	2	0.1146			
XHHW	1	0.1534			
XHHW-2	1/0	0.1825			
XHH	2/0	0.2190			
	3/0	0.2642			
	4/0	0.3197			
	250	0.3904			

*Types RHH, RHW, and RHW-2 without
outer covering
See *Ugly's* page 139 for conversion of
square inches to square millimeters
Source: NFPA 70[®], *National Electrical Code*[®], 2026 edition,
NFPA, Quincy, MA, 2025, Chapter 9, Table 5, as modified.



COMPACT (STRANDED TYPE) COPPER AND ALUMINUM BUILDING WIRE NOMINAL DIMENSIONS* AND AREAS

Size AWG or kcmil	Bare Conductor			Types THW and THHW		Type THHN		Type XHHW		Size AWG or kcmil
	Diam. Inches	Approx. Diam. Inches	Approx. Area Sq. Inches	Approx. Diam. Inches	Approx. Area Sq. Inches	Approx. Diam. Inches	Approx. Area Sq. Inches	Approx. Diam. Inches	Approx. Area Sq. Inches	
8	0.134	0.255	0.0510	—	—	0.224	0.0394	0.224	0.0394	8
6	0.169	0.290	0.0660	0.240	0.0452	0.260	0.0530	0.260	0.0530	6
4	0.213	0.335	0.0881	0.305	0.0730	0.305	0.0730	0.305	0.0730	4
2	0.268	0.390	0.1194	0.360	0.1017	0.360	0.1017	0.360	0.1017	2
1	0.299	0.465	0.1698	0.415	0.1352	0.415	0.1352	0.415	0.1352	1
1/0	0.336	0.500	0.1963	0.450	0.1590	0.450	0.1590	0.450	0.1590	1/0
2/0	0.376	0.545	0.2332	0.495	0.1924	0.490	0.1885	0.490	0.1885	2/0
3/0	0.423	0.590	0.2733	0.540	0.2290	0.540	0.2290	0.540	0.2290	3/0
4/0	0.475	0.645	0.3267	0.595	0.2780	0.590	0.2733	0.590	0.2733	4/0
250	0.520	0.725	0.4128	0.670	0.3525	0.660	0.3421	0.660	0.3421	250
300	0.570	0.775	0.4717	0.720	0.4071	0.715	0.4015	0.715	0.4015	300
350	0.616	0.820	0.5281	0.770	0.4656	0.760	0.4536	0.760	0.4536	350
400	0.659	0.865	0.5876	0.815	0.5216	0.800	0.5026	0.800	0.5026	400
500	0.736	0.940	0.6939	0.885	0.6151	0.880	0.6082	0.880	0.6082	500
600	0.813	1.050	0.8659	0.985	0.7620	0.980	0.7542	0.980	0.7542	600
700	0.877	1.110	0.9676	1.050	0.8659	1.050	0.8659	1.050	0.8659	700
750	0.908	1.150	1.0386	1.075	0.9076	1.090	0.9331	1.090	0.9331	750
900	0.999	1.224	1.1766	1.194	1.1196	1.169	1.0733	1.169	1.0733	900
1000	1.060	1.285	1.2968	1.255	1.2370	1.230	1.1882	1.230	1.1882	1000

100

*Dimensions are from industry sources.
See *Lugly's* pages 139-140 for metric conversions.



DIMENSIONS AND PERCENT AREA OF CONDUIT AND TUBING

(For the combinations of wires permitted in Chapter 9, Table 1, *NEC*®)
(See *Ugly's* pages 139-140 for metric conversions.)

Trade Size Inches	Internal Diameter Inches	Total Area		Over 2 Wires		1 Wire (Nipple)	
		100% Sq. Inches	31% Sq. Inches	40% Sq. Inches	53% Sq. Inches	60% Sq. Inches	
Electrical Metallic Tubing (EMT)							
½	0.622	0.304	0.094	0.122	0.161	0.182	
¾	0.824	0.533	0.165	0.213	0.283	0.320	
1	1.049	0.864	0.268	0.346	0.458	0.519	
1½	1.380	1.496	0.464	0.598	0.793	0.897	
2	1.610	2.036	0.631	0.814	1.079	1.221	
2½	2.067	3.356	1.040	1.342	1.778	2.013	
3	2.731	5.858	1.816	2.343	3.105	3.515	
3½	3.356	8.846	2.742	3.538	4.688	5.307	
4	3.834	11.545	3.579	4.618	6.119	6.927	
5	4.334	14.753	4.573	5.901	7.819	8.852	
6	5.073	20.212	6.266	8.085	10.713	12.127	
	6.093	29.158	9.039	11.663	15.454	17.495	
Electrical Nonmetallic Tubing (ENT)							
½	0.602	0.285	0.088	0.114	0.151	0.171	
¾	0.804	0.508	0.157	0.203	0.269	0.305	
1	1.029	0.832	0.258	0.333	0.441	0.499	
1½	1.36	1.453	0.450	0.581	0.770	0.872	
2	1.59	1.986	0.616	0.794	1.052	1.191	
2½	2.047	3.291	1.020	1.316	1.744	1.975	
3	—	—	—	—	—	—	
3½	—	—	—	—	—	—	
4	—	—	—	—	—	—	
Flexible Metal Conduit (FMC)							
¾	0.384	0.116	0.036	0.046	0.061	0.069	
¾	0.635	0.317	0.098	0.127	0.168	0.190	
¾	0.824	0.533	0.165	0.213	0.283	0.320	
1	1.020	0.817	0.253	0.327	0.433	0.490	
1½	1.275	1.277	0.396	0.511	0.677	0.766	
1½	1.538	1.858	0.576	0.743	0.985	1.115	
2	2.040	3.269	1.013	1.307	1.732	1.961	
2½	2.500	4.909	1.522	1.963	2.602	2.945	
3	3.000	7.069	2.191	2.827	3.746	4.241	
3½	3.500	9.621	2.983	3.848	5.099	5.773	
4	4.000	12.566	3.896	5.027	6.660	7.540	
Intermediate Metal Conduit (IMC)							
¾	—	—	—	—	—	—	
¾	0.680	0.342	0.106	0.137	0.181	0.205	
¾	0.864	0.586	0.182	0.235	0.311	0.352	
1	1.105	0.959	0.297	0.384	0.508	0.575	
1½	1.448	1.647	0.510	0.659	0.873	0.988	
1½	1.683	2.225	0.690	0.890	1.179	1.335	
2	2.150	3.630	1.125	1.452	1.924	2.178	
2½	2.557	5.135	1.592	2.054	2.722	3.081	
3	3.176	7.922	2.456	3.169	4.199	4.753	
3½	3.671	10.584	3.281	4.234	5.610	6.351	
4	4.166	13.631	4.226	5.452	7.224	8.179	
5	5.210	21.32	6.610	8.528	11.30	12.792	
6	6.258	30.76	9.536	12.304	16.302	18.456	



DIMENSIONS AND PERCENT AREA OF CONDUIT AND TUBING

(For the combinations of wires permitted in Chapter 9, Table 1, *NEC*®)
(See *Ugly's* pages 139-140 for metric conversions.)

Trade Size Inches	Internal Diameter Inches	Total Area		2 Wires		Over 2 Wires		1 Wire		(Nipple*) 60%
		100% Sq. Inches	31% Sq. Inches	40% Sq. Inches	53% Sq. Inches	60% Sq. Inches				
Liquidtight Flexible Nonmetallic Conduit (LFNC-A*)										
¾	0.495	0.192	0.060	0.077	0.102	0.115				
¾	0.630	0.312	0.097	0.125	0.165	0.187				
¾	0.825	0.535	0.166	0.214	0.283	0.321				
1	1.043	0.854	0.265	0.342	0.453	0.513				
1¼	1.383	1.502	0.466	0.601	0.796	0.901				
1½	1.603	2.018	0.626	0.807	1.070	1.211				
2	2.063	3.343	1.036	1.337	1.772	2.006				
* Corresponds to Article 100, Conduit, Liquidtight Flexible Nonmetallic (LFNC) list item (1).										
Liquidtight Flexible Nonmetallic Conduit (LFNC-B*)										
¾	0.494	0.192	0.059	0.077	0.102	0.115				
¾	0.632	0.314	0.097	0.125	0.166	0.188				
¾	0.830	0.541	0.168	0.216	0.287	0.325				
1	1.054	0.873	0.270	0.349	0.462	0.524				
1¼	1.395	1.528	0.474	0.611	0.810	0.917				
1½	1.588	1.981	0.614	0.792	1.050	1.188				
2	2.033	3.246	1.006	1.298	1.720	1.948				
* Corresponds to Article 100, Conduit, Liquidtight Flexible Nonmetallic (LFNC) list item (2).										
Liquidtight Flexible Metal Conduit (LFMC)										
¾	0.494	0.192	0.059	0.077	0.102	0.115				
¾	0.632	0.314	0.097	0.125	0.166	0.188				
¾	0.830	0.541	0.168	0.216	0.287	0.325				
1	1.054	0.873	0.270	0.349	0.462	0.524				
1¼	1.395	1.528	0.474	0.611	0.810	0.917				
1½	1.588	1.981	0.614	0.792	1.050	1.188				
2	2.033	3.246	1.006	1.298	1.720	1.948				
2½	2.493	4.881	1.513	1.953	2.587	2.929				
3	3.085	7.475	2.317	2.990	3.962	4.485				
3½	3.520	9.731	3.017	3.893	5.158	5.839				
4	4.020	12.692	3.935	5.077	6.727	7.615				
Rigid Metal Conduit (RMC)										
¾	—	—	—	—	—	—				
¾	0.632	0.314	0.097	0.125	0.166	0.188				
¾	0.836	0.549	0.170	0.220	0.291	0.329				
1	1.063	0.887	0.275	0.355	0.470	0.532				
1¼	1.394	1.526	0.473	0.610	0.809	0.916				
1½	1.624	2.071	0.642	0.829	1.098	1.243				
2	2.083	3.408	1.056	1.363	1.806	2.045				
2½	2.489	4.866	1.508	1.946	2.579	2.919				
3	3.090	7.499	2.325	3.000	3.974	4.499				
3½	3.570	10.010	3.103	4.004	5.305	6.006				
4	4.050	12.882	3.994	5.153	6.828	7.729				
5	5.073	20.212	6.266	8.085	10.713	12.127				
6	6.093	29.158	9.039	11.663	15.454	17.495				



DIMENSIONS AND PERCENT AREA OF CONDUIT AND TUBING

(For the combinations of wires permitted in Chapter 9, Table 1, *NEC*®)
(See *Ugly's* pages 139–140 for metric conversions.)

Trade Size Inches	Internal Diameter Inches	Total Area 100% Sq. Inches	2 Wires 31% Sq. Inches	Over 2 Wires 40% Sq. Inches	1 Wire 53% Sq. Inches	(Nipple) ¹ 60% Sq. Inches
Rigid PVC Conduit (PVC), Schedule 80						
½	0.526	0.217	0.067	0.087	0.115	0.130
¾	0.722	0.409	0.127	0.164	0.217	0.246
1	0.936	0.688	0.213	0.275	0.365	0.413
1¼	1.255	1.237	0.383	0.495	0.656	0.742
1½	1.476	1.711	0.530	0.684	0.907	1.027
2	1.913	2.874	0.891	1.150	1.523	1.725
2½	2.290	4.119	1.277	1.647	2.183	2.471
3	2.864	6.442	1.997	2.577	3.414	3.865
3½	3.326	8.688	2.693	3.475	4.605	5.213
4	3.786	11.258	3.490	4.503	5.967	6.755
5	4.768	17.855	5.535	7.142	9.463	10.713
6	5.709	25.598	7.935	10.239	13.567	15.359
Rigid PVC Conduit (PVC), Schedule 40 & HDPE Conduit (HDPE)						
½	0.602	0.285	0.088	0.114	0.151	0.171
¾	0.804	0.508	0.157	0.203	0.269	0.305
1	1.029	0.832	0.258	0.333	0.441	0.499
1¼	1.360	1.453	0.450	0.581	0.770	0.872
1½	1.590	1.986	0.616	0.794	1.052	1.191
2	2.047	3.291	1.020	1.316	1.744	1.975
2½	2.445	4.695	1.455	1.878	2.488	2.817
3	3.042	7.268	2.253	2.907	3.852	4.361
3½	3.521	9.737	3.018	3.895	5.161	5.842
4	3.998	12.554	3.892	5.022	6.654	7.532
5	5.016	19.761	6.126	7.904	10.473	11.856
6	6.031	28.567	8.856	11.427	15.141	17.140
Type A, Rigid PVC Conduit (PVC)						
½	0.700	0.385	0.119	0.154	0.204	0.231
¾	0.910	0.650	0.202	0.260	0.345	0.390
1	1.175	1.084	0.336	0.434	0.575	0.651
1¼	1.500	1.767	0.548	0.707	0.937	1.060
1½	1.720	2.324	0.720	0.929	1.231	1.394
2	2.155	3.647	1.131	1.459	1.933	2.188
2½	2.635	5.453	1.690	2.181	2.890	3.272
3	3.230	8.194	2.540	3.278	4.343	4.916
3½	3.690	10.694	3.315	4.278	5.668	6.416
4	4.180	13.723	4.254	5.489	7.273	8.234
Type EB, PVC Conduit (PVC)						
2	2.221	3.874	1.201	1.550	2.053	2.325
2½	—	—	—	—	—	—
3	3.330	8.709	2.700	3.484	4.616	5.226
3½	3.804	11.365	3.523	4.546	6.023	6.819
4	4.289	14.448	4.479	5.779	7.657	8.669
5	5.316	22.195	6.881	8.878	11.763	13.317
6	6.336	31.530	9.774	12.612	16.711	18.918

¹Nipples must be 24 inches or less.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Chapter 9, Table 4, as modified.



THREAD DIMENSIONS AND TAP DRILL SIZES

Nominal Size	Coarse Thread Series			Fine Thread Series		
	Threads per In.	Tap Drill	Clearance Drill	Threads per In.	Tap Drill	Clearance Drill
5/64"	48	47	36	80	3/64"	51
1/8"	40	38	29	72	53	47
6	32	36	25	64	50	42
8	32	29	16	56	45	36
10	24	25	13/64"	48	42	31
12	24	16	7/32"	44	37	29
1/4"	20	7	17/64"	40	33	25
5/16"	18	F	21/64"	36	29	16
3/8"	16	5/16"	25/64"	32	21	13/64"
7/16"	14	U	29/64"	28	14	7/32"
1/2"	13	27/64"	33/64"	28	3	17/64"
9/16"	12	31/64"	37/64"	24	1	21/64"
5/8"	11	17/32"	41/64"	24	0	25/64"
3/4"	10	21/32"	49/64"	20	25/64"	29/64"
7/8"	9	49/64"	57/64"	20	29/64"	33/64"
1"	8	7/8"	1-1/64"	18	33/64"	37/64"
1-1/4"	7	1-11/64"	1-17/64"	18	37/64"	41/64"
1-3/8"	6	1-19/64"	1-25/64"	16	11/16"	49/64"
1-1/2"	6	1-27/64"	1-33/64"	14	13/16"	57/64"
2"	4-1/2"	1-25/32"	2-1/32"	14	15/16"	1-1/64"

HOLE SAW CHART *

Trade Size	Rigid Conduit	E. M. T. Conduit	Green-Field	L. T. Flex	Trade Size	Rigid Conduit	E. M. T. Conduit	Green-Field
1/2"	7/8"	3/4"	1"	1-1/8"	2-1/2"	3"	2-7/8"	2-7/8"
3/4"	1-1/8"	1"	1-1/8"	1-1/4"	3"	3-5/8"	3-1/2"	3-5/8"
1"	1-3/8"	1-1/4"	1-1/2"	1-7/8"	4"	4-1/8"	4"	4-1/8"
1-1/4"	1-3/4"	1-5/8"	1-3/4"	1-7/8"	4"	4-5/8"	4-1/2"	4-5/8"
1-1/2"	2"	1-7/8"	2"	2-1/8"	5"	5-3/4"	5-3/4"	5-3/4"
2"	2-1/2"	2-1/8"	2-1/2"	2-3/4"	6"	6-3/4"	6-3/4"	6-3/4"

*Note: For oil-type push button stations, use size 1-7/32" knockout punch.
 *For connectors (male connectors and adapters), use Rigid table.

METAL BOXES

Box Dimension, Inches Trade Size, or Type	Min. Cu. In. Capacity	Maximum Number of Conductors*											
		No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6	No. 4	No. 3	No. 2	No. 1	
4 x 1-1/4 Round or Octagonal	12.5	8	7	6	5	5	4	4	2				
4 x 1-1/2 Round or Octagonal	15.5	10	8	7	6	6	5	4	3				
4 x 2-1/8 Round or Octagonal	21.5	14	12	10	9	8	7	4					
4 x 1-1/4 Square	18.0	12	10	9	8	7	6	3					
4 x 1-1/2 Square	21.0	14	12	10	9	8	7	4					
4 x 2-1/8 Square	30.3	20	17	15	13	12	10	6					
4-11/16 x 1-1/4 Square	25.5	17	14	12	11	10	8	5					
4-11/16 x 1-1/2 Square	29.5	19	16	14	13	11	9	5					
4-11/16 x 2-1/8 Square	42.0	28	24	21	18	16	14	8					
3 x 2 x 1-1/2 Device	7.5	4	3	3	3	3	2	1					
3 x 2 x 2 Device	10.0	6	5	5	4	4	3	2					
3 x 2 x 2-1/4 Device	10.9	7	6	5	4	4	3	2					
3 x 2 x 2-1/2 Device	12.3	8	7	6	5	5	4	2					
3 x 2 x 2-3/4 Device	14.0	9	8	7	6	5	4	2					
3 x 2 x 3-1/2 Device	18.0	12	10	9	8	7	6	3					
4 x 2-1/8 x 1-1/2 Device	10.3	6	5	5	4	4	3	2					
4 x 2-1/8 x 1-7/8 Device	13.0	8	7	6	5	5	4	2					
4 x 2-1/8 x 2-1/8 Device	14.5	9	8	7	6	5	4	2					
3-3/4 x 2 x 2-1/2 Masonry Box/Gang	14.0	9	8	7	6	5	4	2					
3-3/4 x 2 x 3-1/2 Masonry Box/Gang	21.0	14	12	10	9	8	7	4					
FS-Minimum Internal Depth 1-3/4 Single cover/Gang													
FS-Minimum Internal Depth 2-3/8 Single Cover/Gang	13.5	9	7	6	6	5	4	2					
FS-Minimum Internal Depth 1-3/4 Multiple Cover/Gang	18.0	12	10	9	8	7	6	3					
FD-Minimum Internal Depth 2-3/8 Multiple Cover/Gang	18.0	12	10	9	8	7	6	3					
FD-Minimum Internal Depth 2-3/8 Multiple Cover/Gang	24.0	16	13	12	10	9	8	4					

*Where no volume allowances are required by 314.16(B)(2) through 314.16(B)(6).

Source: NFPA 70®, National Electrical Code®, 2026 edition, NFPA, Quincy, MA, 2025; Table 314.16(A), as modified.

MINIMUM COVER REQUIREMENTS, 0 TO 1000 VOLTS ac, 1500 VOLTS dc, NOMINAL

Cover is defined as the distance between the top surface of direct burial cable, conduit, or other raceways and the finished surface.

Wiring Method	Minimum Burial (Inches)
Direct burial cables	24*
Rigid metal conduit or intermediate metal conduit	6*
Electrical metallic tubing	18*
Rigid nonmetallic conduit (Approved for direct burial without concrete encasement)	18*

*For most locations, for complete details, refer to *NEC*® Table 300.7(A) for exceptions such as highways, dwellings, airports, driveways, and parking lots.

Source: Data from NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 300.7(A).

VOLUME REQUIRED PER CONDUCTOR

Size of Conductor	Free Space Within Box for Each Conductor
No. 18	1.5 cubic inches
No. 16	1.75 cubic inches
No. 14	2 cubic inches
No. 12	2.25 cubic inches
No. 10	2.5 cubic inches
No. 8	3 cubic inches
No. 6	5 cubic inches

For complete details see *NEC* 314.16(B)(4).

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 314.16(B)(4), as modified.

SUPPORTING CONDUCTORS IN VERTICAL RACEWAYS – SPACINGS FOR CONDUCTOR SUPPORTS

Conductor Size	Support of Conductors in Vertical Raceways	Conductors	
		Copper	Aluminum or Copper-Clad Aluminum
18 AWG through 8 AWG	Not greater than	100 feet	100 feet
6 AWG through 1/0 AWG	Not greater than	100 feet	200 feet
2/0 AWG through 4/0 AWG	Not greater than	80 feet	180 feet
Over 4/0 AWG through 350 kcmil	Not greater than	60 feet	135 feet
Over 350 kcmil through 500 kcmil	Not greater than	50 feet	120 feet
Over 500 kcmil through 750 kcmil	Not greater than	40 feet	95 feet
Over 750 kcmil	Not greater than	35 feet	85 feet

For SI units: 1 foot = 0.3048 meter.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 300.21(A), as modified.



MINIMUM DEPTH OF CLEAR WORKING SPACE AT ELECTRICAL EQUIPMENT

Nominal ac Voltage to Ground	Conditions		
	1	2	3
	Minimum Clear Distance (ft)		
0–150 V	3	3	3
151–600 V	3	3½	4
601–2500 V	3	4	5
2501–9000 V	4	5	6
9001–25000 V	5	6	9
25001 V–75 kV	6	8	10
Above 75 kV	8	10	12

Notes:

1. For SI units, 1 foot = 0.3048 meter.
2. Where the conditions are as follows:
 - Condition 1**—Exposed or enclosed live parts on one side of the working space and no exposed or enclosed live or grounded parts on the other side of the working space, or exposed or enclosed live parts on both sides of the working space that are effectively guarded by insulating materials.
 - Condition 2**—Exposed or enclosed live parts on one side of the working space and grounded parts on the other side of the working space. Concrete, brick, or tile walls shall be considered as grounded.
 - Condition 3**—Exposed or enclosed live parts on both sides of the working space.

See *Ugly's* pages 139–140 for metric conversions. Where equipment rated 800 amperes or more that contains OCPDs, switching devices, or control devices is installed and there are personnel doors intended for entrance to and egress from the working space less than 25 ft from the nearest edge of the working space, NEC 110.26(C)(3) states the doors shall open at least 90 degrees in the direction of egress and be equipped with listed panic hardware or listed fire exit hardware. Entrances to rooms and other guarded locations that contain exposed live parts shall comply with 110.27(C) and shall be marked with conspicuous warning signs forbidding unqualified persons to enter; the marking shall comply with 110.21(B).

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Tables 110.26(A)(1) and 110.34(A), as modified.



**MINIMUM CLEARANCE OF LIVE PARTS, OVER
1000 VOLTS ac, 1500 VOLTS dc, NOMINAL**

Nominal Voltage Rating (kV)	Impulse Withstand (BIL) (kV)		Minimum Clearance of Live Parts, Inches*			
			Phase-to-Phase		Phase-to-Ground	
	Indoors	Outdoors	Indoors	Outdoors	Indoors	Outdoors
2.4-4.16	60	95	4.5	7	3.0	6
7.2	75	95	5.5	7	4.0	6
13.8	95	110	7.5	12	5.0	7
14.4	110	110	9.0	12	6.5	7
23	125	150	10.5	15	7.5	10
34.5	150	150	12.5	15	9.5	10
	200	200	18.0	18	13.0	13
46		200		18		13
		250		21		17
69		250		21		17
		350		31		25
115		550		53		42
138		550		53		42
		650		63		50
161		650		63		50
		750		72		58
230		750		72		58
		900		89		71
		1050		105		83

* For SI units: 1 inch = 25.4 millimeters.

The values given are the minimum clearance for rigid parts and bare conductors under favorable service conditions. They shall be increased for conductor movement or under unfavorable service conditions, or wherever space limitations permit. The selection of the associated impulse withstand voltage for a particular system voltage is determined by the characteristics of the overvoltage (surge) protective equipment.

See *Ugly's* pages 139-140 for metric conversions.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 495.24, as modified.



MINIMUM SIZE EQUIPMENT GROUNDING CONDUCTORS (EGCs) FOR GROUNDING RACEWAY AND EQUIPMENT

Rating or Setting of Automatic Overcurrent Device in Circuit Ahead of Equipment, Conduit, Etc., Not Exceeding (Amperes)	Size (AWG or kcmil)	
	Copper	Aluminum or Copper-Clad Aluminum*
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250
1600	4/0	350
2000	250	400
2500	350	600
3000	400	600
4000	500	750
5000	700	1250
6000	800	1250

Note: Where necessary to comply with *NEC* 250.4(A)(5) or 250.4(B)(4), the equipment grounding conductor EGC shall be sized larger than given in this table.

* See installation requirements in *NEC* 250.120.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 250.122, as modified.



GROUNDING ELECTRODE CONDUCTOR FOR ALTERNATING-CURRENT SYSTEMS

Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil)		Size of Grounding Electrode Conductor (AWG/kcmil)	
Copper	Aluminum or Copper-Clad Aluminum	Copper	Aluminum or Copper-Clad Aluminum
2 or Smaller	1/0 or Smaller	8	6
1 or 1/0	2/0 or 3/0	6	4
2/0 or 3/0	4/0 or 250	4	2
Over 3/0 through 350	Over 250 through 500	2	1/0
Over 350 through 600	Over 500 through 900	1/0	3/0
Over 600 through 1100	Over 900 through 1750	2/0	4/0
Over 1100	Over 1750	3/0	250

Notes:

1. If multiple sets of service-entrance conductors connect directly to a service drop, set of overhead service conductors, set of underground service conductors, or service lateral, the equivalent size of the largest service-entrance conductor shall be determined by the largest sum of the areas of the corresponding conductors of each set.
2. If there are no service-entrance conductors, the grounding electrode conductor size shall be determined by the equivalent size of the largest service-entrance conductor required for the load to be served.
3. See installation requirements in *NEC* 250.64.

Source: NFPA 70®, *National Electrical Code*®, 2026 edition, NFPA, Quincy, MA, 2025, Table 250.66, as modified.