

COPPER BUSBAR AMPACITY CHART

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Material: High Conductivity Copper | Frequency: 60Hz AC

1/16" THICKNESS SERIES (1.6mm)

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
					Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)
1/16 × 1/2	0.0312	39	0.121	2640.0	1.00	103	1.00	136	1.00	157
1/16 × 3/4	0.0469	93.7	0.181	175.0	1.00	145	1.00	193	1.00	225
1/16 × 1	0.0625	79.6	0.241	132	1.00	187	1.00	250	1.00	285
1/16 × 1-1/2	0.0938	119	0.362	87.7	1.00	270	1.00	350	1.00	410
1/16 × 2	0.125	159	0.483	65.8	1.01	345	1.01	460	1.01	530

1/8" THICKNESS SERIES (3.2mm)

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
					Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)
1/8 × 1/2	0.0625	79.6	0.241	132	1.00	153	1.00	205	1.00	235
1/8 × 3/4	0.0938	119	0.362	87.7	1.00	215	1.00	285	1.00	325
1/8 × 1	0.125	159	0.483	65.8	1.01	270	1.01	360	1.01	415
1/8 × 1-1/2	0.188	239	0.726	43.8	1.01	385	1.01	510	1.01	590
1/8 × 2	0.250	318	0.966	32.9	1.02	495	1.02	660	1.02	760
1/8 × 2-1/2	0.312	397	1.21	26.4	1.02	600	1.02	800	1.02	920
1/8 × 3	0.375	477	1.45	21.9	1.03	710	1.03	940	1.03	1100
1/8 × 3-1/2	0.438	558	1.69	18.8	1.04	810	1.03	1100	1.03	1250
1/8 × 4	0.500	636	1.93	16.5	1.04	900	1.04	1200	1.04	1400

3/16" THICKNESS SERIES (4.8mm)

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
					Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)
3/16 × 1/2	0.0938	119	0.362	87.7	1.00	195	1.00	260	1.00	300
3/16 × 3/4	0.141	179	0.545	58.4	1.01	270	1.01	360	1.01	415

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
3/16 × 1	0.188	239	0.726	43.8	1.01	340	1.01	455	1.01	520
3/16 × 1-1/2	0.281	358	1.09	29.3	1.02	480	1.02	630	1.02	730
3/16 × 2	0.375	477	1.45	21.9	1.03	610	1.03	810	1.03	940
3/16 × 2-1/2	0.469	597	1.81	17.5	1.04	740	1.04	980	1.04	1150
3/16 × 3	0.562	715	2.17	14.6	1.05	870	1.05	1150	1.05	1350
3/16 × 3-1/2	0.656	835	2.53	12.5	1.07	990	1.06	1300	1.06	1500
3/16 × 4	0.750	955	2.90	11.0	1.09	1100	1.08	1450	1.08	1700

1/4" THICKNESS SERIES (6.4mm)

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
					Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)
1/4 × 1/2	0.125	159	0.483	65.8	1.01	240	1.01	315	1.01	360
1/4 × 3/4	0.188	239	0.726	43.8	1.01	320	1.01	425	1.01	490
1/4 × 1	0.250	318	0.966	32.9	1.02	400	1.02	530	1.02	620
1/4 × 1-1/2	0.375	477	1.45	21.9	1.03	560	1.03	740	1.03	860
1/4 × 2	0.500	637	1.93	16.5	1.04	710	1.04	940	1.04	1100
1/4 × 2-1/2	0.625	796	2.41	13.2	1.06	850	1.06	1150	1.06	1300
1/4 × 3	0.750	955	2.90	11.0	1.08	990	1.08	1300	1.07	1500
1/4 × 3-1/2	0.875	1110	3.38	9.40	1.10	1150	1.09	1500	1.09	1750
1/4 × 4	1.00	1270	3.86	8.23	1.12	1250	1.11	1700	1.10	1950
1/4 × 5	1.25	1590	4.83	6.58	1.16	1500	1.15	2000	1.14	2350
1/4 × 6	1.50	1910	5.80	5.49	1.18	1750	1.17	2350	1.17	2700

3/8" THICKNESS SERIES (9.5mm)

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
					Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)
3/8 × 3/4	0.281	358	1.09	29.3	1.02	415	1.02	550	1.02	630
3/8 × 1	0.375	477	1.45	21.9	1.03	510	1.03	680	1.03	790
3/8 × 1-1/2	0.562	715	2.17	14.6	1.05	710	1.04	940	1.04	1100
3/8 × 2	0.750	955	2.90	11.0	1.08	880	1.08	1150	1.07	1350
3/8 × 2-1/2	0.938	1190	3.62	8.77	1.12	1050	1.10	1400	1.09	1600
3/8 × 3	1.12	1430	4.35	7.35	1.15	1200	1.14	1600	1.13	1800
3/8 × 3-1/2	1.31	1670	5.06	6.38	1.18	1350	1.16	1800	1.15	2160
3/8 × 4	1.50	1910	5.80	5.49	1.20	1500	1.19	2000	1.18	2350

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
3/8 × 5	1.88	2390	7.26	4.38	1.24	1800	1.23	2400	1.22	2800
3/8 × 6	2.25	2860	8.69	3.66	1.27	2100	1.26	2800	1.24	3250

1/2" THICKNESS SERIES (12.7mm)

Size (inches)	Area (in²)	MCM	Weight (lb/ft)	DC Resistance @ 20°C (μΩ/ft)	30°C RISE		50°C RISE		65°C RISE	
					Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)	Skin Ratio @ 90°C	Ampacity (A)
1/2 × 1	0.500	637	1.93	16.5	1.04	620	1.04	820	1.04	940
1/2 × 1-1/2	0.750	955	2.90	11.0	1.08	830	1.08	1100	1.07	1250
1/2 × 2	1.00	1270	3.86	8.23	1.12	1000	1.11	1350	1.10	1550
1/2 × 2-1/2	1.25	1590	4.83	6.58	1.16	1200	1.15	1600	1.14	1850
1/2 × 3	1.50	1910	5.80	5.49	1.20	1400	1.19	1850	1.18	2150
1/2 × 3-1/2	1.75	2230	6.76	4.70	1.24	1550	1.22	2100	1.21	2400
1/2 × 4	2.00	2550	7.73	4.11	1.26	1700	1.25	2300	1.24	2650
1/2 × 5	2.50	3180	9.66	3.29	1.32	2050	1.30	2750	1.29	3150
1/2 × 6	3.00	3820	11.6	2.74	1.36	2400	1.34	3150	1.33	3650
1/2 × 8	4.00	5090	15.5	2.06	1.42	3000	1.40	4000	1.39	4600

TECHNICAL NOTES

Material Specifications

Material: High Conductivity Copper (C11000)

Conductivity: 100% IACS minimum

Temperature: DC resistance measured at 20°C (68°F)

Density: 8.89 g/cm³ (0.321 lb/in³)

Skin Effect Ratio

Definition: Ratio of AC resistance to DC resistance at specified temperature

Impact: Increases with conductor size and frequency

Range: 1.00 (minimal effect) to 1.42 (significant effect)

Higher values indicate greater current concentration near surface

Temperature Rise Standards

30°C Rise: Conductor temperature = Ambient + 30°C (Conservative rating)

50°C Rise: Conductor temperature = Ambient + 50°C (Standard rating)

65°C Rise: Conductor temperature = Ambient + 65°C (Maximum rating)

All ratings based on 40°C ambient temperature

Application Guidelines

Natural convection cooling assumed

Single conductor in free air

For enclosed installations, apply appropriate derating factors

Consider skin effect ratio when designing for AC applications

Higher skin effect ratios reduce effective ampacity

Conversion Reference

MCM: Thousand Circular Mils

1 inch = 25.4 mm

1 lb/ft = 1.488 kg/m

1 in² = 645.16 mm²

1 μΩ/ft = 3.281 μΩ/m