

1.10 Strap & Tubing

Strap & Tubing Products

Copper Strap: Bare (Continuous lengths available up to 50lbs)

Current (Amps)	Width (inches)	Thickness (inches)	Weight (lbs/ft)	Length	Part Number
50	1"	.020"	0.07728	Sold by the pound. Please specify rounded numbers in one pound increments when ordering.	34301000
100	2"	.020"	0.15600		34202000
150	3"	.032"	0.37095		34303000
200	4"	.025"	0.38640		34254000
200	4"	.032"	0.49460		34304000

Copper Strap: Silver Plated

Current (Amps)	Width (inches)	Thickness (Inches)	Weight (lbs/ft)	Length (Ft Roll)	Part Number
25	1/2"	0.020	0.03864	25	34200500P
30	5/8"	0.020	0.04830	25	34200625P
40	3/4"	0.020	0.05796	25	34200750P
50	1"	0.020	0.07728	25	34201000P
65	1-1/4"	0.020	0.09660	25	34201250P
75	1-1/2"	0.020	0.11590	25	34201500P

Braided Copper Strap: Tin Plated

Current (Amps)	Gauge (awg)	Width (inches)	Thickness (Inches)	Weight (lbs/ft)	Length	Part Number
15	36	1/4"	0.030"	0.015	Specify length at time of order	1232
30	10	5/8"	0.030"	0.033		JTFB-242
100	3/0	2"	0.140"	0.530		1233

Copper Tubing: Bare

Current (Amps)	O.D. (inches)	Wall Thk. (inches)	Weight (lbs/ft)	Length	Part Number
30	3/8"	0.032"	0.1340	Sold by the pound. Please specify rounded numbers in one pound increments when ordering.	36103877
40	1/2"	0.032"	0.1820		36105567
50	5/8"	0.035"	0.2520		36106680
60	3/4"	0.035"	0.3060		36107811

Copper Tubing: Silver Plated

Current (Amps)	O.D. (inches)	Wall Thk (inches)	Weight (lbs/ft)	Length	Part Number
30	3/8"	0.032"	0.1340	Sold by the pound. Please specify rounded numbers in one pound increments when ordering.	36103877P
40	1/2"	0.032"	0.1820		36105567P
50	5/8"	0.035"	0.2520		36106680P
60	3/4"	0.035"	0.3047		36107811P

1.10 Strap & Tubing

Strap & Tubing Products

Optional Accessories

Description	Part Number
1 Pound of brazing rod (15% Silver). Contains 20 rods/lb. Rod dimensions are 0.050" x 1/8" x 20" Note: 1 rod covers approximately 8 linear inches	15620F
Brazing Flux, 1 Pound Note: One pound of flux comes in a container approximately 3" tall, 3.5" diameter. Flux is applied to brazing joint with small brush (not included).	HARSSBF1

Calculations, Examples, and Rules of Thumb

Strap Ampacity Calculation:

Ampacity for strap material is defined by 25 Amps per one inch of linear surface width. For instance 2" wide copper ampacity is calculated as 2" wide x 2 sides x 25 = 100 Amps.

Tubing Ampacity Calculation:

Ampacity for tubing is calculated similarly to strap as shown above. Tubing can be thought of as rolled strap. For example, 1/2" tubing has a circumference of $2 \times \Omega \times r$, where Ω is 3.14 and r is 1/2 of the diameter, so the circumference of the tubing is $2 \times 3.14 \times .5/2 = 1.57$. For tubing, we do not use the inner and outer surface area, so multiply the circumference by 25 to get the overall current rating $1.57 \times 25 = 39.25$ Amps or round to 40 Amps.

Conversion from Feet to Pounds of Material:

To purchase strap or tubing by the foot, it is necessary to order by the pound (lb). Use the following calculation to convert as needed, please round value to the next pound for ordering:

When Feet of Strap/Tubing is known

Desired Length in Feet x Weight in lbs/ft = Pounds of Material Required

Example: 20 ft of 1" bare copper strap is $20 \times 0.07728 = 1.45$, round up next whole number to order 2 pounds.

Brazing Solder Usage Rules of Thumb:

A tower ground system typically uses 15lbs (300 rods) of brazing rods and 1 pound of brazing flux.