



COPPER COILS

Literature





Figure 1 Copper Coils

Introduction:

Copper Coils are soft temper (annealed) coils that are made in accordance with JIS H3300 C1220T. It is a 15 meter pancake copper coil, which is different to a 6 meter straight length copper tube. Copper coils are easily bent due to its soft temper attribute. These JIS H3300 C1220T copper coils are suitable for water supply, heat exchanger, and chemical applications.

Copper coils are long lasting as they have better corrosion resistance, high temperature resistance, and high mechanical strength. Its long lasting criteria make it widely consumed in different industries. Copper coil can be joined by soldering, capillary fittings, or compression fittings.

Specifications:

Copper coils are manufactured based on the requirements of specifications under JIS H3300. For JIS H3300, it is a standard that specifies expanded copper and copper alloy seamless pipes and tubes, having a round section. Copper coils are lightweight, high corrosion resistant, suitable for heat exchanger, and minimize the need of joints.

The hardness and strength of the coil are defined by its temper, which is drawn and annealed. Drawn temper refers to hard temper while annealed refers to soft temper. Copper coil is a soft temper pancake coil, where it can be easily bent by hand pressure. However, suitable bending tools are recommended for bending purposes. The ease of bending makes copper coils economical as it does not need a lot of joints.

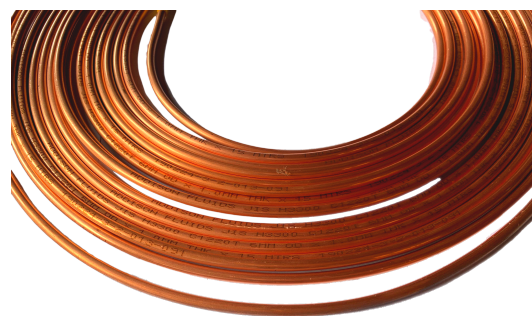


Figure 2 Copper Coil Stamping

Copper Coil Attributes:

Under JIS H3300, the tensile strength for copper coil is 245 N/mm² - 324 N/mm². For Chuan Kok's copper coils, it contains a minimum 99.90% of copper (CU) and range of phosphorus in 0.015% - 0.040%. This copper material chemical combination also known as phosphorus deoxidized copper. Deoxidized copper with phosphorus is to reduce the cuprous oxide and remove porosity by acting as oxygen removal during the manufacturing process.

Outer Diameter and Coil Thickness Specifications:

The copper coil outer diameter (OD) is measured by Inches and MM. For Inches OD, it is available from 1/4"OD to 7/8"OD. While for MM OD, the outer diameter size is available from 6MM to 15MM.

The Table below illustrates the OD tolerance under standard JIS H3300.

Tube OD	Tolerance
4MM to 15 MM	± 0.10MM
16 MM to 25MM	± 0.10MM

For copper coil thickness, it is also available in two measurements: MM and Standard Gauges. For MM thickness, it is available in 0.9MM, 1.2MM, and 1.5MM. For Standard Gauges thickness, it is available in SWG or BWG. Below table illustrates the Standard Gauges thickness.

G	SWG	BWG
1	7.62MM	7.62MM
2	7.01MM	7.21MM
3	6.40MM	6.58MM
4	5.89MM	6.05MM
5	5.38MM	5.59MM
6	4.88MM	5.16MM
7	4.47MM	4.57MM
8	4.06MM	4.19MM
9	3.66MM	3.76MM
10	3.25MM	3.40MM
11	2.95MM	3.05MM
12	2.64MM	2.77MM
13	2.34MM	2.41MM
14	2.03MM	2.11MM
15	1.83MM	1.83MM
16	1.63MM	1.65MM
17	1.42MM	1.47MM

18	1.22MM	1.24MM
19	1.02MM	1.07MM
20	0.91MM	0.89MM
21	0.81MM	0.81MM
22	0.71MM	0.71MM
23	0.61MM	0.64MM
24	0.56MM	0.56MM
25	0.51MM	0.51MM
26	0.46MM	0.46MM
27	0.41MM	0.41MM
28	0.38MM	0.36MM
29	0.35MM	0.33MM
30	0.31MM	0.30MM
31	0.295MM	0.254MM
32	0.274MM	0.229MM
33	0.254MM	0.203MM
34	0.234MM	0.178MM
35	0.213MM	0.127MM
36	0.193MM	0.102MM

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