



Product by
Sangchai
Group

CAMBRIDGE

COPPER TUBE

- **No. 1 Copper Tube from Korea**
- **Over 30 years of Experience**
- **Guaranteed High Standard**





MAKING LIFE BETTER WITH COPPER

Established in 1986, Cambridge was designed to supply tube for its sister company Jungwoo fitting, and to sell tube products throughout the Asian market. By increasing production each year since opening, Cambridge has been able to meet increasing demands. In 2006 Cambridge acquired a second tube mill facility, giving a combined capacity in excess of 70,000 metric tons, and the ability to produce a range of products from Level wound coil to pancake coil, utility coil, and straight lengths. Cambridge operates both cast and roll and extrusion processes, and a range of copper tube product from 4.76mm to 307.98mm (3/16" ~ 12"). Cambridge currently supply customers for tube in over 30 countries worldwide.

CAMBRIDGE
COPPER TUBE

HEADQUARTER / SEOUL OFFICE

431, Cheonggyecheon-ro, Dongdaemun-gu, Seoul, South Korea

Zip Code : 02586

www.sangchaigroup.com



- 1993. 11. Plant moved to Yangju city, Kyongsanggi-Do, Korea
- 1994. 07. Appointed as regional industrial complex
- 1995. 10. Seoul Office established : NUNGDO BLDG, SHINSEOLDONG, DONGDAEMOON-GU, SEOUL, KOREA
- 1996. 03. Renamed to "NUNGWON METAL Ind.Co.,Ltd." - conversion to Corporation
- 2000. 01. Awarded "Exporting USD 10 Million Sales"
- 2000. 12. Increased Capital (from USD 10 Million to 10.8 Million)
- 2004. 11. Awarded "Exporting USD 30 Million Sales" by Ministry of Commerce Industry and Energy
- 2005. 10. Awarded Gold Medal for "Korea Best Practice Skill Contest"
- 2006. 06. Awarded prize for "Honorable Industrial safety supervisor"
- 2006. 07. Completed Automatic Equipment at 2nd plant
- 2006. 09. Awarded Gold Prize for "2006 Quality Management Contest in Korea"
- 2006. 11. Awarded "Prime Minister's Prize" & "Exporting USD 70 Million Sales" by Ministry of Commerce Industry and Energy
- 2007. 01. Awarded "Global Standard Management Award" for Product Quality Management

1990

2000

2010

1980

- 1986. 03. Established "DONCKWANG METAL CO." (produced Seamless Copper Water Tubes)
- 1988. 01. Corporate name changed to "SHIN HAN METAL IND.CO."

- 2010. 11. Awarded "Exporting USD 100 Million Sales" by Ministry of Commerce Industry and Energy
- 2011. 10. Awarded for its distinct relations between labor and corporation by Industrial Bank of Korea
- 2011. 11. Awarded "Exporting USD 200 Million Sales" by Ministry of Commerce Industry and Energy
- 2014. 04. Forbes CEO Award

HISTORY

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PRODUCT LIST

Soft Coils = Pancake Coil

- Temper : O
- Size : 6.35mm~28.58mm (1/4"OD~1-1/8"OD)
- Length : Standard 15m / 30m / 50ft / 60ft / 100ft
- Incising & Ink Marking available
- Packing : Cambridge Carton box
Plastic wrap + label
Outer Cap / Inner Cap
- UL 700 psi Certified Refrigeration Coil



Straight Tube

- Temper : O, OL, H, 1/2H
- Size : 6mm ~ 307.98mm (6mm ~ 12-1/8"OD)
- Incising available
- Packing : Bundle / Wooden Box
- Length : Various



ACR/Medical Straight Tube

- Temper : H
- Size : 8mm ~ 200mm (3/8"OD ~ 8-1/8"OD)
- Length : Standard 3m / 6m / 10ft / 20ft
- Incising & Ink Marking available
- Packing : Bundle, Wooden box, Inner cap



Packaging



PCC - Carton Box



S/Length - Bundle



S/Length - Wooden Box

MECHANICAL PROPERTIES

MECHANICAL PROPERTIES

Standard	UNS No.	Copper Alloy	Temper		Tensile Strength	Elongation %	Hardness	Grain Size (mm)
KS, JIS	C1220 C1201	DHP DLP	O	Soft Annealed	over 205	over 40	below 60 (HR15T)	0.025-0.060
			OL	Light Annealed			below 65 (HR15T)	below 0.040
			1/2H	Half Hard	245-325	30-60 (HR30T)		
			H	Drawn	over 315 over 275 over 255	over 55 (HR30T) (apply to below 25mm only)		
ASTM B88 ASTM B280	C12200	DHP	O60	Soft Annealed	over 205		below 50 (HRF)	over 0.040
			O50	Light Annealed	over 205		below 55 (HRF)	over 0.025
			H58	Drawn	over 246		over 30 (HR30T)	
AS1432 AS/NZS1571	C12200	C1220T	Ann	Annealed			below 70 (HV)	
			BQ	Bendable Quality			80-100 (HV)	
			HD	Drawn			over 100 (HV)	
EN1057 EN12735-1	C12200 CW024A	DHP	R220	Annealed	over 220	over 40	40-70(HV 5)	
			R250	Half Hard	over 250	over 20	75-100(HV 5)	
			R290	Hard	over 290	over 3	over 100(HV 5)	

TYPES OF COPPER TUBE IS GROUPED

By Chemical	DHP	High Phosphorus Deoxidized (P:0.015%~0.040%)
	DLP	Low Phosphorus Deoxidized (P:0.004%~0.015%)
By Temper	O	Annealed as "soft" tube
	OL	Annealed as "light" tube
	1/2H	Half Hard is referred to as "R250, 1/2H, Bendable"
	H	Drawn temper tube is often referred to as "hard" tube
By Use	Water Tube	Domestic water service and distribution
	ACR Tube	Air-conditioning and refrigeration field service
	Condenser Tube	Heat exchange & fin tube
	DWV Tube	Drain, waste and sewage service
	GAS Tube	Natural gas & liquified petroleum gas feul distribution service
By Shape	Straight Length	Normal length of S/T is 6m (~200mm OD), 4m (200~250mm OD), 3m (250~308mm OD)
	- PanCakeCoil	15, 18, 30M / COIL
	- Bunch Coil	150~440KG/ROLL
	- LevelWoundCoil	110~300KG/ROLL
	Inner Grooved Tube	110~220KG/ROLL

SIZE RANGE

Cambridge produces full range of copper tube associated with Japanese, European, American, Australian and Korean Standard

OD	Available Wall Thickness			Phosphorus Alloy											
	S/T, LWC Max	S/T, LWC Min	IGT	DLP(C12000) : Low Phosphorus Alloy						DHP(C12200) : High Phosphorus Alloy					
				Packing Method											
	Bundle or Wooden Box			Bobbin or No Bobbin + Pallet						Carton + Pallet					
	Products														
	Straight Tube			LWC			IGT			PCC					
H	1/2H	O	H	OL	O	H	OL	O	H	OL	O				
4.00	1.00	0.27		X	X	X	△	△	△	X	X	X	X	X	X
4.76	1.00	0.27		X	X	X	△	△	△	X	X	X	X	X	X
5.00	1.00	0.27	0.20	X	X	X	●	●	●	●	●	●	X	●	●
6.35	1.20	0.27	0.20	●	●	●	●	●	●	●	●	●	X	●	●
7.00	1.40	0.27	0.22	●	●	●	●	●	●	●	●	●	X	●	●
7.94	1.50	0.27	0.25	●	●	●	●	●	●	●	●	●	X	●	●
9.52	1.65	0.27	0.28	●	●	●	●	●	●	●	●	●	X	●	●
12.70	2.00	0.37		●	●	●	●	●	●	X	X	X	X	●	●
15.88	2.00	0.40		●	●	●	●	●	●	X	X	X	X	●	●
19.05	2.00	0.50		●	●	●	●	●	●	X	X	X	X	●	●
22.22	3.11	0.55		●	●	●	●	●	●	X	X	X	X	●	●
25.40	3.50	0.60		●	●	●	●	●	●	X	X	X	X	●	●
28.58	6.11	0.60		●	●	●	●	●	●	X	X	X	X	●	●
31.75	8.00	0.70		●	●	●	X	X	X	X	X	X	X	X	X
34.92	8.00	0.70		●	●	●	X	X	X	X	X	X	X	X	X
38.10	8.00	0.80		●	●	●	X	X	X	X	X	X	X	X	X
41.28	8.00	0.80		●	●	●	X	X	X	X	X	X	X	X	X
50.80	8.00	0.80		●	●	●	X	X	X	X	X	X	X	X	X
53.98	8.00	0.90		●	●	●	X	X	X	X	X	X	X	X	X
60.00	8.00	0.91		●	●	●	X	X	X	X	X	X	X	X	X
63.50	8.00	0.91		●	●	●	X	X	X	X	X	X	X	X	X
66.68	8.00	1.09		●	●	●	X	X	X	X	X	X	X	X	X
76.20	10.00	1.22		●	●	●	X	X	X	X	X	X	X	X	X
79.38	10.00	1.09		●	●	●	X	X	X	X	X	X	X	X	X
83.54	10.00	2.01		●	●	●	X	X	X	X	X	X	X	X	X
88.90	10.00	1.40		●	●	●	X	X	X	X	X	X	X	X	X
101.60	10.00	1.22		●	●	●	X	X	X	X	X	X	X	X	X
104.78	10.00	1.47		●	●	●	X	X	X	X	X	X	X	X	X
108.00	10.00	1.50		●	●	●									
127.00	10.00	1.42		●	X	●	X	X	X	X	X	X	X	X	X
130.18	10.00	1.83		●	X	●	X	X	X	X	X	X	X	X	X
133.00	10.00	1.50		●	X	●	X	X	X	X	X	X	X	X	X
152.40	10.00	1.63		●	X	●	X	X	X	X	X	X	X	X	X
155.58	10.00	1.83		●	X	●	X	X	X	X	X	X	X	X	X
159.00	10.00	2.00		●	X	●	X	X	X	X	X	X	X	X	X
180.00	10.00	2.00		●	X	●	X	X	X	X	X	X	X	X	X
203.20	10.00	2.03		●	X	●	X	X	X	X	X	X	X	X	X
206.38	10.00	2.77		●	X	●	X	X	X	X	X	X	X	X	X
207.01	10.00	1.91		●	X	●	X	X	X	X	X	X	X	X	X
257.18	10.00	4.00		●	X	●	X	X	X	X	X	X	X	X	X
307.98	10.29	4		●	X	●	X	X	X	X	X	X	X	X	X
310	10.29	4		●	X	●	X	X	X	X	X	X	X	X	X

ASTM B88

Seamless Copper Water Tube



I. SIZE TABLE

Type	OD		Wall Thickness		WEIGHT		Temper Quality	Product Type	Safe Working Pressure at service temperature		
	Inch		mm	Inch	mm	kg/m			lb/ft	65 °C	149 °F
	Nom	Act								kPa	psi
K	1/4	3/8	9.53	0.035	0.889	0.216	0.145	O60, H58	LWC, PCC, S/T	7,090	1,020
	3/8	1/2	12.70	0.049	1.245	0.400	0.269	O60, H58	LWC, PCC, S/T	7,480	1,080
	1/2	5/8	15.88	0.049	1.245	0.512	0.344	O60, H58	LWC, PCC, S/T	5,880	850
	5/8	3/4	19.05	0.049	1.245	0.622	0.418	O60, H58	LWC, PCC, S/T	4,850	700
	3/4	7/8	22.23	0.065	1.651	0.954	0.641	O60, H58	LWC, PCC, S/T	5,550	800
	1	1 1/8	28.58	0.065	1.651	1.248	0.839	O60, H58	LWC, PCC, S/T	4,260	610
	1 1/4	1 3/8	34.93	0.065	1.651	1.543	1.037	H58	S/T	3,450	500
	1 1/2	1 5/8	41.28	0.072	1.829	2.026	1.361	H58	S/T	3,230	460
	2	2 1/8	53.98	0.083	2.108	3.070	2.063	H58	S/T	2,830	410
	2 1/2	2 5/8	66.68	0.095	2.413	4.355	2.926	H58	S/T	2,620	380
	3	3 1/8	79.38	0.109	2.769	5.957	4.003	H58	S/T	2,520	360
	3 1/2	3 5/8	92.08	0.120	3.048	7.620	5.120	H58	S/T	2,390	340
	4	4 1/8	104.78	0.134	3.404	9.690	6.511	H58	S/T	2,340	340
	5	5 1/8	130.18	0.160	4.064	14.392	9.671	H58	S/T	2,250	320
	6	6 1/8	155.58	0.192	4.877	20.638	13.868	H58	S/T	2,260	320
	8	8 1/8	206.38	0.271	6.883	38.558	25.909	H58	S/T	2,410	340
10	10 1/8	257.180	0.338	8.585	59.928	40.269	H58	S/T	2,410	350	
12	12 1/8	307.98	0.405	10.287	85.991	57.783	H58	S/T	2,410	350	
L	1/4	3/8	9.53	0.030	0.762	0.188	0.126	O60, H58	LWC, PCC, S/T	6,010	870
	3/8	1/2	12.70	0.035	0.889	0.295	0.198	O60, H58	LWC, PCC, S/T	5,220	750
	1/2	5/8	15.88	0.040	1.016	0.424	0.285	O60, H58	LWC, PCC, S/T	4,740	680
	5/8	3/4	19.05	0.042	1.067	0.539	0.362	O60, H58	LWC, PCC, S/T	4,120	590
	3/4	7/8	22.23	0.045	1.143	0.677	0.455	O60, H58	LWC, PCC, S/T	3,770	540
	1	1 1/8	28.58	0.050	1.270	0.974	0.654	O60, H58	LWC, PCC, S/T	3,240	470
	1 1/4	1 3/8	34.93	0.055	1.397	1.315	0.884	H58	S/T	2,900	420
	1 1/2	1 5/8	41.28	0.060	1.524	1.701	1.143	H58	S/T	2,670	380
	2	2 1/8	53.98	0.070	1.778	2.606	1.751	H58	S/T	2,380	340
	2 1/2	2 5/8	66.68	0.080	2.032	3.689	2.479	H58	S/T	2,190	310
	3	3 1/8	79.38	0.090	2.286	4.949	3.325	H58	S/T	2,070	300
	3 1/2	3 5/8	92.08	0.100	2.540	6.386	4.291	H58	S/T	1,980	280
	4	4 1/8	104.78	0.110	2.794	8.001	5.377	H58	S/T	1,910	270
	5	5 1/8	130.18	0.125	3.175	11.323	7.609	H58	S/T	1,750	250
	6	6 1/8	155.58	0.140	3.556	15.180	10.200	H58	S/T	1,630	230
	8	8 1/8	206.38	0.200	5.080	28.715	19.295	H58	S/T	1,760	250
10	10 1/8	257.180	0.250	6.350	44.725	30.053	H58	S/T	1,770	250	
12	12 1/8	307.980	0.280	7.112	60.085	40.374	H58	S/T	1,650	240	

* Pressure ratings for K, L, M DWV and refrigeration tube are calculated for annealed tube and for use when jointing is made using a heat source. Hard drawn tube has higher pressure ratings which will only be maintained when non-heat source joining methods are used. This information is key when systems are designed.

ASTM B88

ASTM B88

Seamless Copper Water Tube



I. SIZE TABLE

Type	OD			Wall Thickness		WEIGHT		Temper Quality	Product Type	Safe Working Pressure at service temperature	
	Inch		mm	Inch	mm	kg/m	lb/ft			65 °C	149
	Nom	Act								kPa	psi
M	3/8	1/2	12.70	0.025	0.635	0.215	0.145	O60, H58	LWC, PCC, S/T	3,660	530
	1/2	5/8	15.88	0.028	0.711	0.303	0.204	O60, H58	LWC, PCC, S/T	3,260	470
	5/8	3/4	19.05	0.030	0.762	0.391	0.263	O60, H58	LWC, PCC, S/T	2,900	420
	3/4	7/8	22.23	0.032	0.813	0.489	0.329	O60, H58	LWC, PCC, S/T	2,650	380
	1	1 1/8	28.58	0.035	0.889	0.691	0.464	O60, H58	LWC, PCC, S/T	2,240	320
	1 1/4	1 3/8	34.93	0.042	1.067	1.015	0.682	H58	S/T	2,200	310
	1 1/2	1 5/8	41.28	0.049	1.245	1.400	0.940	H58	S/T	2,170	310
	2	2 1/8	53.98	0.058	1.473	2.172	1.459	H58	S/T	1,960	280
	2 1/2	2 5/8	66.68	0.065	1.651	3.015	2.026	H58	S/T	1,770	250
	3	3 1/8	79.38	0.072	1.829	3.983	2.676	H58	S/T	1,650	230
	3 1/2	3 5/8	92.08	0.083	2.108	5.326	3.579	H58	S/T	1,640	230
	4	4 1/8	104.78	0.095	2.413	6.936	4.661	H58	S/T	1,650	230
	5	5 1/8	130.18	0.109	2.769	9.907	6.657	H58	S/T	1,520	220
	6	6 1/8	155.58	0.122	3.099	13.269	8.916	H58	S/T	1,420	200
8	8 1/8	206.38	0.170	4.318	24.500	16.463	H58	S/T	1,490	210	
10	10 1/8	257.18	0.212	5.385	38.074	25.584	H58	S/T	1,490	210	
12	12 1/8	307.98	0.254	6.452	54.628	36.708	H58	S/T	1,500	210	

II. MARKING AND INCISING

OD SIZE	WTTYPE	Standard Marking		Note
		Ink Marking (Durable)	Incising (Permanent)	
Full range	Type K	TradeMark, Type K, Origin	TradeMark, Type K	Green Ink
	Type L	TradeMark, Type L, Origin	TradeMark, Type L	Blue Ink
	Type M	TradeMark, Type M, Origin	TradeMark, Type M	Red Ink

※ Warnock hersey logo or NSF61 logo and other information can be marked by mutual agreement, the standard and the license agreement

III. FINISHING

CLEANLINESS	END-CAP
Unrequired by the Standard	End-capped by a buyer's option



ASTM B88

ASTM B280



Seamless Copper Tube for
Air Conditioning and Refrigeration Field Service

I. SIZE TABLE OF B280 STRAIGHT TUBE

※ Yellow Block : UI 700Psi Certified Size




Type	OD		Wall Thickness		WEIGHT		Temper Quality	Safe Working Pressure at service temperature	
	Inch	mm	Inch	mm	kg/m	lb/ft		65 °C	149 °F
								kPa	psi
L	3/8	9.53	0.030	0.762	0.188	0.126	H58	6,010	870
	1/2	12.70	0.035	0.889	0.295	0.198	H58	5,220	750
	5/8	15.88	0.040	1.016	0.424	0.285	H58	4,740	680
	3/4	19.05	0.042	1.067	0.539	0.362	H58	4,120	590
	7/8	22.23	0.045	1.143	0.677	0.455	H58	3,770	540
	1 1/8	28.58	0.050	1.270	0.974	0.654	H58	3,240	470
	1 3/8	34.93	0.055	1.397	1.315	0.884	H58	2,900	420
	1 5/8	41.28	0.060	1.524	1.701	1.143	H58	2,670	380
	2 1/8	53.98	0.070	1.778	2.606	1.751	H58	2,380	340
	2 5/8	66.68	0.080	2.032	3.689	2.479	H58	2,190	310
	3 1/8	79.38	0.090	2.286	4.949	3.325	H58	2,070	300
	3 5/8	92.08	0.100	2.540	6.386	4.291	H58	1,980	280
	4 1/8	104.78	0.110	2.794	8.001	5.377	H58	1,910	270
	5 1/8	130.18	0.125	3.175	11.323	7.609	H58	1,750	250
	6 1/8	155.58	0.140	3.556	15.180	10.200	H58	1,630	230
8 1/8	206.38	0.200	5.080	28.715	19.295	H58	1,760	250	
K	3/8	9.53	0.035	0.889	0.216	0.145	H58	7,090	1,020
	1/2	12.70	0.049	1.245	0.400	0.269	H58	7,480	1,080
	5/8	15.88	0.049	1.245	0.512	0.344	H58	5,880	850
	3/4	19.05	0.049	1.245	0.622	0.418	H58	4,850	700
	7/8	22.23	0.065	1.651	0.954	0.641	H58	5,550	800
	1 1/8	28.58	0.065	1.651	1.248	0.839	H58	4,260	610
	1 3/8	34.93	0.065	1.651	1.543	1.037	H58	3,450	500
	1 5/8	41.28	0.072	1.829	2.026	1.361	H58	3,230	460
	2 1/8	53.98	0.083	2.108	3.070	2.063	H58	2,830	410
	2 5/8	66.68	0.095	2.413	4.355	2.926	H58	2,620	380
	3 1/8	79.38	0.109	2.769	5.957	4.003	H58	2,520	360
	3 5/8	92.08	0.120	3.048	7.620	5.120	H58	2,390	340
	4 1/8	104.78	0.134	3.404	9.690	6.511	H58	2,340	340
	5 1/8	130.18	0.160	4.064	14.392	9.671	H58	2,250	320
	6 1/8	155.58	0.192	4.877	20.638	13.868	H58	2,260	320
8 1/8	206.38	0.271	6.883	38.558	25.909	H58	2,410	340	

※ Pressure ratings for K, L, M DWV and refrigeration tube are calculated for annealed tube and for use when jointing is made using a heat source. Hard drawn tube has higher pressure ratings which will only be maintained when non-heat source joining methods are used. This information is key when systems are designed.



ASTM B280

II. SIZE TABLE OF PANCAKE COIL

※ Yellow Block : UI 700Psi Certified Size 

Type	OD		Wall Thickness (inch/mm)		WEIGHT		Temper Quality	Safe Working Pressure at service temperature	
	Inch	mm	Inch	mm	kg/m	lb/ft		65 °C	149 °F
								kPa	psi
Soft Coil B280 ACR/Type L Standard	1/4	6.35	0.030	0.762	0.120	0.080	O60	9,340	1,350
	5/16	7.94	0.032	0.813	0.163	0.109	O60	7,850	1,130
	3/8	9.53	0.032	0.813	0.199	0.134	O60	6,440	930
	1/2	12.70	0.032	0.813	0.271	0.182	O60	4,750	680
	5/8	15.88	0.035	0.889	0.374	0.251	O60	4,120	590
	3/4	19.05	0.035	0.889	0.453	0.305	O60	3,410	490
	7/8	22.23	0.045	1.143	0.677	0.455	O60	3,770	540
	1 1/8	28.58	0.050	1.270	0.974	0.654	O60	3,240	470
Soft Coil B280 Type K Heavy Coil	3/8	9.53	0.035	0.889	0.216	0.145	O60	7,090	1,020
	1/2	12.70	0.049	1.245	0.400	0.269	O60	7,480	1,080
	5/8	15.88	0.049	1.245	0.512	0.344	O60	5,880	850
	3/4	19.05	0.049	1.245	0.622	0.418	O60	4,850	700
	7/8	22.23	0.065	1.651	0.954	0.641	O60	5,550	800
	1 1/8	28.58	0.065	1.651	1.248	0.839	O60	4,260	610
Soft Coil B743 Economy	1/4	6.35	0.024	0.610	0.098	0.066	O60	7,320	1,060
	5/16	7.94	0.024	0.610	0.126	0.084	O60	5,760	830
	3/8	9.53	0.024	0.610	0.153	0.103	O60	4,750	680
	1/2	12.70	0.028	0.711	0.239	0.161	O60	4,120	590
	5/8	15.88	0.028	0.711	0.303	0.204	O60	3,260	470
	3/4	19.05	0.032	0.813	0.416	0.280	O60	3,110	450
	7/8	22.23	0.037	0.940	0.562	0.378	O60	3,080	440

ASTM B280

II. MARKING AND INCISING

ITEM	PRODUCT TYPE	Standard Marking		Note
		Ink Marking (Durable)	Incising (Permanent)	
B280 STANDARD	S/TUBE	ACR, Trademark, OD, Origin	Trademark, ACR	Blue Ink
B280 TYPE K HEAVY	S/TUBE	ACR TYPE K, Trademark, OD, Origin	Trademark, ACR TYPE K	Green Ink
B280 STANDARD	COIL	Not required by standard	Trademark, ACR	Black Ink
B280 TYPE K HEAVY	COIL	Not required by standard	Trademark, ACR TYPE K	Black Ink
B743 ECONOMY	COIL	Not required by standard	N/A	Black Ink

IV. FINISHING

CLEANLINESS	END-CAP
0.038g / m ²	Required by the Standard



ASTM B819

Seamless Copper Tube for Medical Gas Systems

I. SIZE TABLE

※ Yellow Block : UI 700Psi Certified Size



Nominal	OD		OD Wall Thickness(Inch/mm)				Temper Quality	Product Type	
	Inch	Actual		K-Type		L-Type			
		Inch	mm	inch	mm	inch			mm
1/4	3/8	9.53	0.035	0.889	0.030	0.762	H58	S/T	
3/8	1/2	12.70	0.049	1.245	0.035	0.889	H58	S/T	
1/2	5/8	15.88	0.049	1.245	0.040	1.016	H58	S/T	
5/8	3/4	19.05	0.049	1.245	0.042	1.067	H58	S/T	
3/4	7/8	22.23	0.065	1.651	0.045	1.143	H58	S/T	
1	1 1/8	28.58	0.065	1.651	0.050	1.270	H58	S/T	
1 1/4	1 3/8	34.93	0.065	1.651	0.055	1.397	H58	S/T	
1 1/2	1 5/8	41.28	0.072	1.829	0.060	1.524	H58	S/T	
2	2 1/8	53.98	0.083	2.108	0.070	1.778	H58	S/T	
2 1/2	2 5/8	66.68	0.095	2.413	0.080	2.032	H58	S/T	
3	3 1/8	79.38	0.109	2.769	0.090	2.286	H58	S/T	
3 1/2	3 5/8	92.08	0.120	3.048	0.100	2.540	H58	S/T	
4	4 1/8	104.78	0.134	3.404	0.110	2.794	H58	S/T	
5	5 1/8	130.18	0.160	4.064	0.125	3.175	H58	S/T	
6	6 1/8	155.58	0.192	4.877	0.140	3.556	H58	S/T	
8	8 1/8	206.38	0.271	6.883	0.200	5.080	H58	S/T	

II. MARKING AND INCISING

	TEMPER	Standard Marking		Note
		Ink Marking (Durable)	Incising (Permanent)	
Full range	H58	Trademark, Origin, MED	Trademark, Type K	Green Ink
		Trademark, Origin, MED	Trademark, Type L	Blue Ink

III. FINISHING

CLEANLINESS	END-CAP
0.038g/m ²	Required by the standard



JIS H3300



Copper and copper alloy seamless pipes and tubes

I. SIZE TABLE

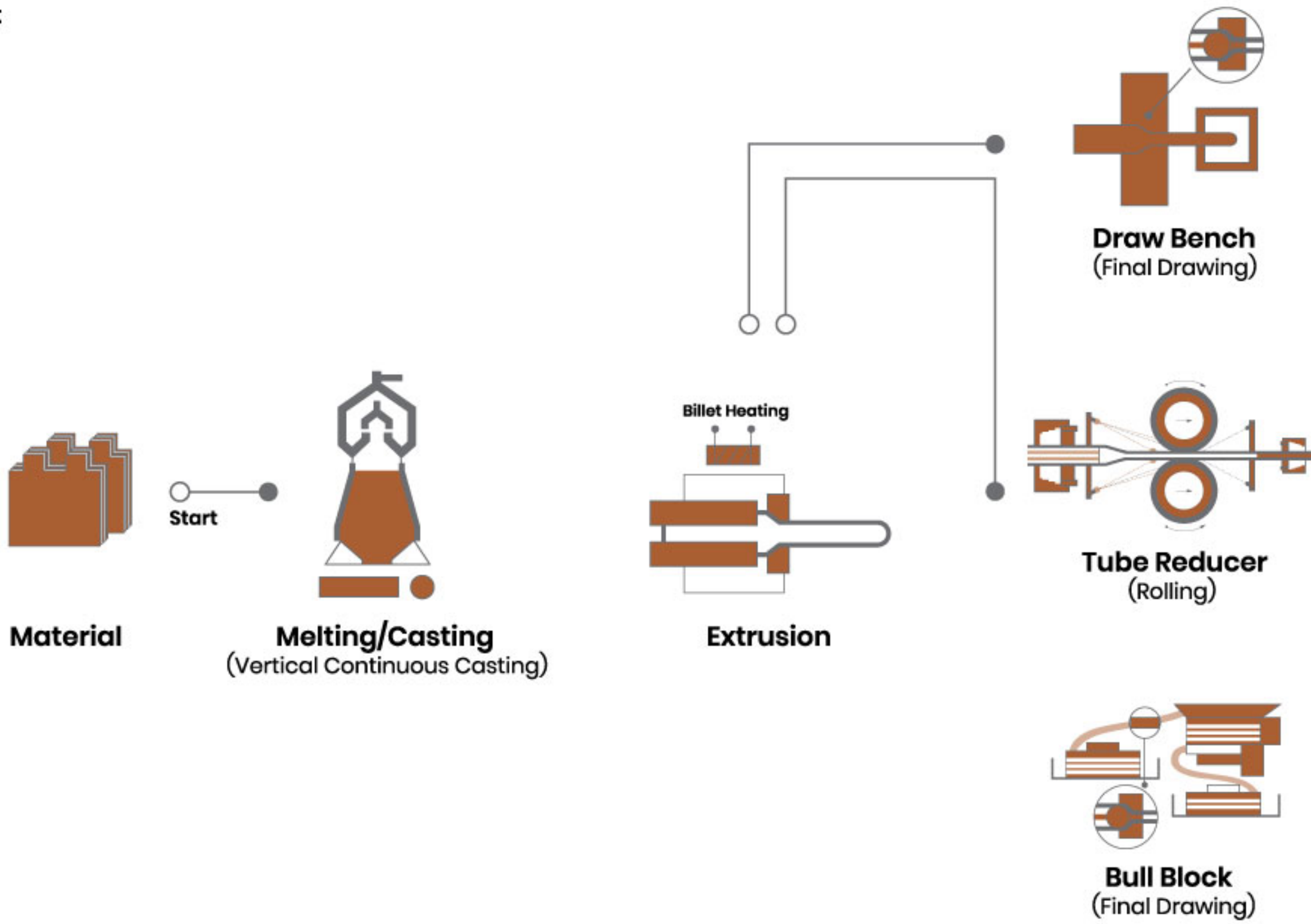
OD	WALLTHICKNESS																Temper Quality	Product Type		
	Type K	Type L	Type M	Acceptable WT range																
ACT mm	0.25	0.30	0.35	0.40	0.50	0.60	0.70	0.80	100	120	150	200	250	3.00	3.50	4.00	4.50	5.00		
4																			O, OL	LWC
5																			O, OL	LWC
6																			H, 1/2H, O, OL	LWC, PCC, S/T
6.35																			H, 1/2H, O, OL	LWC, PCC, S/T
8																			H, 1/2H, O, OL	LWC, PCC, S/T
9.52								0.76	0.89										H, 1/2H, O, OL	LWC, PCC, S/T
10																			H, 1/2H, O, OL	LWC, PCC, S/T
12																			H, 1/2H, O, OL	LWC, PCC, S/T
12.7					0.64				0.89	1.24									H, 1/2H, O, OL	LWC, PCC, S/T
14																			H, 1/2H, O, OL	LWC, PCC, S/T
15																			H, 1/2H, O, OL	LWC, PCC, S/T
15.88							0.71		1.02	1.24									H, 1/2H, O, OL	LWC, PCC, S/T
16																			H, 1/2H, O, OL	LWC, PCC, S/T
18																			H, 1/2H, O, OL	LWC, PCC, S/T
19.05									1.07	1.24									H, 1/2H, O, OL	LWC, PCC, S/T
20																			H, 1/2H, O, OL	LWC, PCC, S/T
22																			H, 1/2H, O, OL	LWC, PCC, S/T
22.22								0.81		1.14	1.65								H, 1/2H, O, OL	LWC, PCC, S/T
25																			H, 1/2H, O, OL	LWC, PCC, S/T
25.4																			H, 1/2H, O, OL	LWC, PCC, S/T
28.58								0.89		1.27	1.65								H, 1/2H, O, OL	LWC, PCC, S/T
31.8																			H	S/T
32																			H	S/T
34.92									1.07	1.40	1.65								H	S/T
38.1																			H	S/T
41.28										1.24	1.52	1.83							H	S/T
45																			H	S/T
50																			H	S/T
53.98											1.47	1.78	2.11						H	S/T
66.68											1.65	2.03							H	S/T
79.38												1.83	2.29						H	S/T
104.78														2.41	2.79				H	S/T
130.18														2.77	3.18				H	S/T
155.58															3.10	3.56			H	S/T
200																			H	S/T
250																			H	S/T

※ Green Block shows the range of manufacture on JIS Standard book

MANUFACTURING PROCESS FOR COPPER TUBE

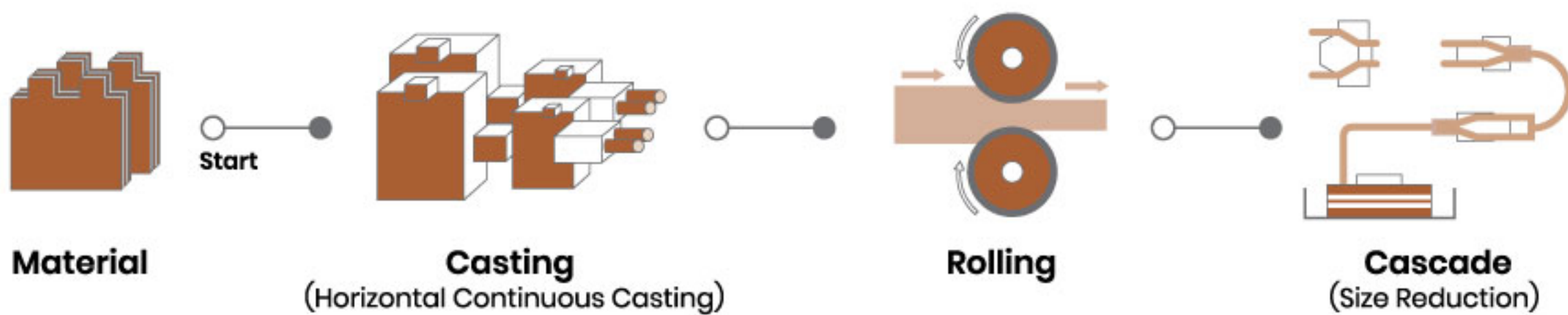
EXTRUSION LINE (PLANT 1)

Start



CAST & ROLL LINE (PLANT 2)

Start



CERTIFICATES



JIS MARK CERTIFICATE



NSF/ANSI STANDARD 61

Drinking Water System Components - Health Effects
Tubing/Hose

Copper Tube	>= 3/16" OD
Level Wound Coil	>= 3/16" OD
Pancake Coil	>= 3/16" OD
Straight Tube Type K, L, M	>= 3/16" OD



UPC - ASTM B88

Copper Water Tube - ASTM B88 - Type K, L, M
Hard drawn & Soft annealed copper water tube in various types & sizes
Products comply with the applicable sections of the latest edition of the Uniform Plumbing Code.
Manufactured in compliance with ASTM B88-2009.
Tested by an IAPMO R&T recognized laboratory.



ISO 9001

Quality Management System
Scope of Supply:
The manufacture and servicing of Copper Billets & Copper Tube



ISO 14001

Environmental Management System
Scope of Supply:
The manufacture and servicing of Copper Billets & Copper Tube



Intertek Testing Services



**WARNOCK HERSEY
ASTM B88 / B280 / B306 / B837**

- 1) ASTM B88 - Type K, L, M: Seamless Copper Metal Tube
- 2) ASTM B280 - ACR: Seamless Copper Tube for Air Conditioners & Refrigeration Field Service
- 3) ASTM B306 - DWV: Seamless Copper Tube for DWV, Drain & Sewer
- 4) ASTM B837 - GAS: Seamless Copper Tube for Natural Gas & Liquefied Petroleum (LP) Gas Fuel Distribution System
Tested by an INTERTEK

WARNOCK HERSEY



RoHS

Restriction of use of certain Hazardous Substances
1) Level Wound Coil
2) Straight Tube
3) Pan Cake Coil
Tested by SGS Korea



UL 700 PSI R410A

Tubing, Refrigerant - Component
PCC: 1/4"OD ~ 1-1/8"OD
ASTM B280 Standard and Economy Size
Straight Tube: 1/4"OD ~ 2-1/2"OD
ASTM B280 and ASTM B819 Type K, L standard
Tested by UL



CAMBRIDGE
COPPER TUBE



Your Refrigeration
& Electrical Solutions

88 Borommaratchachonnani Rd., Chim Phli , Taling Chan , Bangkok 10170
88 ถนนบรมราชชนนี แขวงจิมพลี เขตตลิ่งชัน กรุงเทพฯ 10170

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