



# TATEYAMA

High Quality Seamless Copper Pipe





# TATEYAMA COPPER PIPE



Pre-insulated TATEYAMA seamless copper pipe and TATEYAMA seamless copper pipe was manufactured since late 1990's, under strictly quality control measures in its production with the best seamless copper tube made from materials of the highest degree of purity

Pre-insulated TATEYAMA seamless copper pipe and TATEYAMA seamless copper pipe have been widely used in HVAC projects, retails and also OEM market.

Pre-insulated TATEYAMA seamless copper pipe and TATEYAMA seamless copper pipe are electronically tested by Eddy Current method according to ASTM E 243.

## MANUFACTURING STANDARDS

STANDARD		ALLOY NO	TEMPER				CHEMICAL REQUIREMENT
JIS H3300		C12200	H	1/2 H	OL	O	Cu 99.9% min. P 0.015 - 0.04%
B2871		C106	H	1/2 H		O	
ASTM	B88	C12200	H				
ASTM	B819	C12200	H				
ASTM	B280	C12200	H	1/2 H	OL	O	

## PRESSURE RATINGS & BURST STRENGTH

There are various methods for determining the recommended, allowable or rated internal pressure-temperature ratings for piping materials & systems. These include calculated ratings such as tensile and yield stress, piping dimensions and engineering correlations. Pressure ratings based on actual material performance may also be developed and used. As for copper piping materials, the calculated allowable internal pressure for copper tube in service is commonly based on the formula used in the American Society of Mechanical Engineers Code for Pressure Piping (ASME B31)

$$P = \frac{2St_{min}}{D_{max} - 0.8t_{min}}$$

P = allowable pressure, psi

S = maximum allowable stress in tension, psi

t<sub>min</sub> = wall thickness, inch

D<sub>max</sub> = outside diameter, inch

**COPPER PLUMBING TUBE**  
**ASTM B-88 (Hard Drawn Straight Seamless Tube)**

**Type K**

ACTUAL OD		WALL THICKNESS		WEIGHT Kg/ length	SAFETY WORKING PRESSURE BASE ON ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
3/8"	9.52	0.035	0.89	1.252	1850	12,759	1796	12386	1688	11638
1/2"	12.7	0.049	1.24	2.316	1946	13,421	1889	13028	1776	12245
5/8"	15.88	0.049	1.24	2.959	1534	10,579	1490	10276	1400	9652
3/4"	19.04	0.049	1.24	3.597	1266	8,731	1229	8476	1156	7970
7/8"	22.22	0.065	1.65	5.532	1466	10,110	1424	9821	1338	9225
1 1/8"	28.58	0.065	1.65	7.242	1126	7,766	1093	7538	1028	7078
1 3/8"	34.93	0.065	1.65	8.950	914	6,303	888	6124	834	579
1 5/8"	41.28	0.072	1.83	11.766	850	5,862	825	5690	776	5350
2 1/8"	53.98	0.083	2.11	17.837	747	5,152	726	5007	682	4702
2 5/8"	66.68	0.095	2.41	25.244	684	4,717	664	4579	624	4302
3 1/8"	79.38	0.109	2.77	34.586	662	4,566	643	4434	604	4164
3 5/8"	92.08	0.120	3.05	44.256	628	4,331	610	4207	573	3950
4 1/8"	104.78	0.134	3.4	56.178	618	4,262	600	4138	564	3888

**Type L**

ACTUAL OD		WALL THICKNESS		WEIGHT Kg/ length	SAFETY WORKING PRESSURE BASE ON ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
3/8"	9,52	0,030	0,76	1,085	1569	10821	1524	10510	1432	9873
1/2"	12,7	0,035	0,89	1,713	1341	9248	1302	8979	1224	8440
5/8"	15,88	0,040	1,02	2,470	1242	8566	1206	8317	1133	7811
3/4"	19,04	0,042	1,07	3,134	1086	7490	1055	7276	991	6832
7/8"	22,22	0,045	1,14	3,917	1002	6910	972	6703	914	6301
1 1/8"	28,58	0,050	1,27	5,653	850	5862	825	5690	776	5350
1 3/8"	34,93	0,055	1,40	7,650	755	5207	733	5055	689	475
1 5/8"	41,28	0,060	1,52	9,850	702	4841	682	4703	641	4419
2 1/8"	53,98	0,070	1,78	15,143	625	4310	607	4186	570	3930
2 5/8"	66,68	0,080	2,03	21,39	577	3979	560	3862	527	3633
3 1/8"	79,38	0,090	2,29	28,771	545	3759	529	3648	497	3426
3 5/8"	92,08	0,100	2,54	37,067	522	3600	506	3490	476	3281
4 1/8"	104,78	0,110	2,79	46,376	504	3476	489	3372	460	3171

**Type M**

ACTUAL OD		WALL THICKNESS		WEIGHT Kg/ length	SAFETY WORKING PRESSURE BASE ON ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
3/8"	9,52	0,025	0,64	0,926	1298	8,952	1261	8697	1186	8177
1/2"	12,7	0,025	0,64	1,258	982	6,772	953	6572	896	6177
5/8"	15,88	0,028	0,71	1,755	850	5,862	825	5690	776	5350
3/4"	19,04	0,030	0,76	2,264	764	5,269	742	5117	697	4805
7/8"	22,22	0,032	0,81	2,826	701	4,834	680	4690	639	4405
1 1/8"	28,58	0,035	0,89	4,016	580	4,000	563	3883	529	3647
1 3/8"	34,93	0,042	1,07	5,905	582	4,014	565	3897	531	3661
1 5/8"	41,28	0,049	1,24	8,092	569	3,924	553	3814	520	3585
2 1/8"	53,98	0,058	1,47	12,58	514	3,545	499	3441	469	3233
2 5/8"	66,68	0,065	1,65	17,488	471	3,248	457	3152	430	2965
3 1/8"	79,38	0,072	1,83	23,130	435	3,000	423	2917	397	2737
3 5/8"	92,08	0,083	2,11	30,940	433	2,986	421	2903	395	2723
4 1/8"	104,78	0,095	2,41	40,209	431	2,972	419	2890	394	2716



**COPPER TUBE FOR AIR  
CONDITIONER & REFRIGERATION  
ASTM B-280**

**Hard Drawn Straight Seamless Tube (5.8m length)**

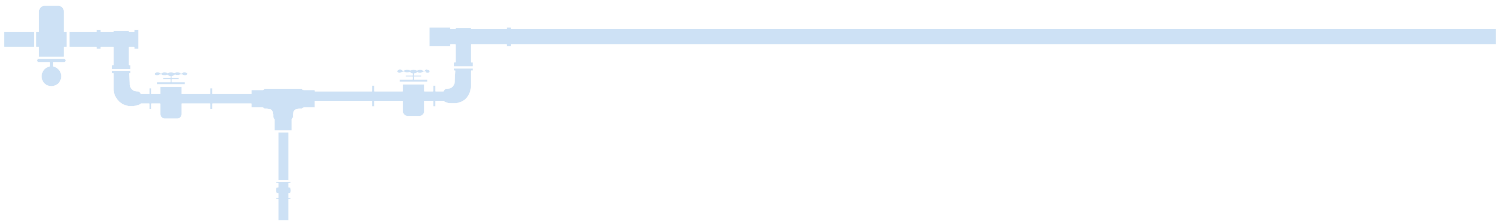
Actual OD		Wall Thickness		WEIGHT Kg/ length	Safety Working Pressure base on ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
3/8"	9.52	0.030	0.76	1.085	1569	10821	1524	10510	1432	9873
1/2"	12.7	0.035	0.89	1.713	1341	9248	1302	8979	1224	8440
5/8"	15.88	0.040	1.02	2.470	1242	8566	1206	8317	1133	7811
3/4"	19.04	0.042	1.07	3.134	1086	7490	1055	7276	991	6832
7/8"	22.22	0.045	1.14	3.917	1002	6910	972	6703	914	6301
1"	25.40	0.048	1.22	4.808	922	6359	895	6172	841	5798
1 1/8"	28.58	0.050	1.27	5.653	850	5862	825	5690	776	5350
1 3/8"	34.93	0.055	1.40	7.650	755	5207	733	5055	689	475
1 5/8"	41.28	0.060	1.52	9.850	702	4841	682	4703	641	4419
2 1/8"	53.98	0.070	1.78	15.143	625	4310	607	4186	570	3930
2 5/8"	66.68	0.080	2.03	21.39	577	3979	560	3862	527	3633
3 1/8"	79.38	0.090	2.29	28.771	545	3759	529	3648	497	3426
3 5/8"	92.08	0.100	2.54	37.067	522	3600	506	3490	476	3281
4 1/8"	104.78	0.110	2.79	46.376	504	3476	489	3372	460	3171

**ANNEALED SEAMLESS COILED TUBE (15M LENGTH)**

ACTUAL OD		WALL THICKNESS		WEIGHT Kg/ length	SAFETY WORKING PRESSURE BASE ON ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
1/4"	6.35	0.030	0.76	1.791	1406	9697	1102	7600	703	4845
3/8"	9.52	0.032	0.81	2.974	984	6786	770	5310	492	3392
1/2"	12.7	0.032	0.81	4.059	727	5014	569	392	363	2502
5/8"	15.88	0.035	0.89	5.623	618	4262	484	3338	309	2130
3/4"	19.04	0.035	0.89	6.8087	511	3524	400	2759	256	1765
3/4"	19.04	0.042	0.91	6.954	631	4352	495	3414	316	2178

**ANNEALED SEAMLESS COILED TUBE (15M LENGTH)  
COMMERCIAL THICKNESS**

ACTUAL OD		WALL THICKNESS		WEIGHT Kg/ coil	SAFETY WORKING PRESSURE BASE ON ASMI B31			
inch	mm	inch	mm		50°C/122°F		70°C/158°F	
					Psi	kPa	Psi	kPa
1/4"	6.35	0.024	0.60	1.454	1125	7760	950	6555
3/8"	9.52	0.024	0.60	2.256	727	5013	614	4234
1/2"	12.7	0.026	0.65	3.301	546	3765	461	3178
5/8"	15.88	0.32	0.81	5.145	572	3946	483	3333
3/4"	19.04	0.042	0.89	6.809	521	3599	440	3040



## COPPER TUBE FOR MEDICAL GAS SYSTEM ASTM B819

### Type K

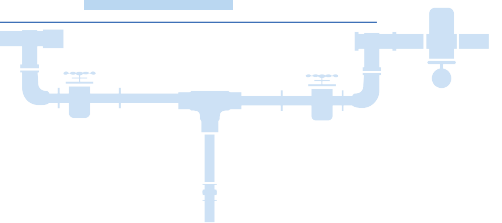
ACTUAL OD		WALL THICKNESS		Weight Kg/ length	SAFETY WORKING PRESSURE BASE ON ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
3/8"	9.52	0.035	0.89	1.252	1850	12.759	1796	12386	1688	11638
1/2"	12.7	0.049	1.24	2.316	1946	13.421	1889	13028	1776	12245
5/8"	15.88	0.049	1.24	2.959	1534	10.579	1490	10276	1400	9652
3/4"	19.04	0.049	1.24	3.597	1266	8.731	1229	8476	1156	7970
7/8"	22.22	0.065	1.65	5.532	1466	10.110	1424	9821	1338	9225
1 1/8"	28.58	0.065	1.65	7.242	1126	7.766	1093	7538	1028	7078
1 3/8"	34.93	0.065	1.65	8.950	914	6.303	888	6124	834	579
1 5/8"	41.28	0.072	1.83	11.766	850	5.862	825	5690	776	5350
2 1/8"	53.98	0.083	2.11	17.837	747	5.152	726	5007	682	4702
2 5/8"	66.68	0.095	2.41	25.244	684	4.717	664	4579	624	4302
3 1/8"	79.38	0.109	2.77	34.586	662	4.566	643	4434	604	4164
3 5/8"	92.08	0.120	3.05	44.256	628	4.331	610	4207	573	3950
4 1/8"	104.78	0.134	3.4	56.178	618	4.262	600	4138	564	3888

### Type L

ACTUAL OD		WALL THICKNESS		WEIGHT Kg/ length	SAFETY WORKING PRESSURE BASE ON ASMI B31					
inch	mm	inch	mm		100°F / 38°C		300°F / 149°C		400°F / 205°C	
					psi	kPa	psi	kPa	psi	kPa
3/8"	9.52	0.030	0.76	1.085	1569	10821	1524	10510	1432	9873
1/2"	12.7	0.035	0.89	1.713	1341	9248	1302	8979	1224	8440
5/8"	15.88	0.040	1.02	2.470	1242	8566	1206	8317	1133	7811
3/4"	19.04	0.042	1.07	3.134	1086	7490	1055	7276	991	6832
7/8"	22.22	0.045	1.14	3.917	1002	6910	972	6703	914	6301
1"	25.40	0.048	1.22	4.808	922	6359	895	6172	841	5798
1 1/8"	28.58	0.050	1.27	5.653	850	5862	825	5690	776	5350
1 3/8"	34.93	0.055	1.40	7.650	755	5207	733	5055	689	475
1 5/8"	41.28	0.060	1.52	9.850	702	4841	682	4703	641	4419
2 1/8"	53.98	0.070	1.78	15.143	625	4310	607	4186	570	3930
2 5/8"	66.68	0.080	2.03	21.39	577	3979	560	3862	527	3633
3 1/8"	79.38	0.090	2.29	28.771	545	3759	529	3648	497	3426
3 5/8"	92.08	0.100	2.54	37.067	522	3600	506	3490	476	3281
4 1/8"	104.78	0.110	2.79	46.376	504	3476	489	3372	460	3171

### REFRIGERANT PRESSURE - TEMPERATURE CHART

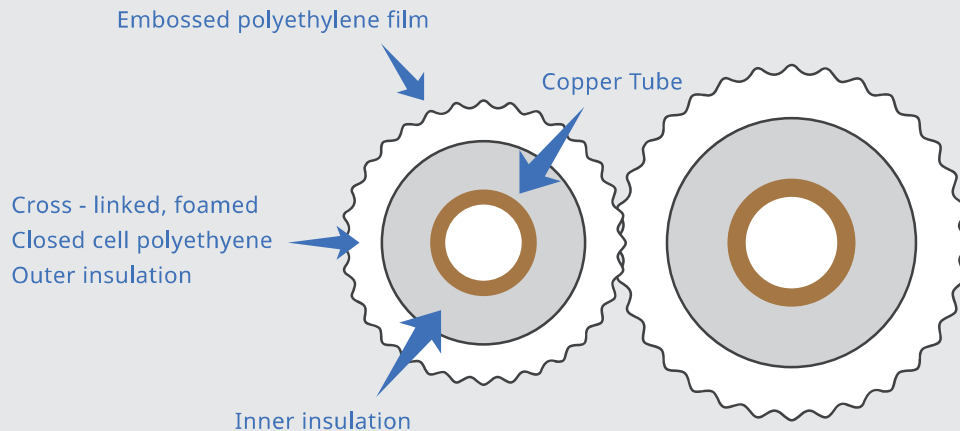
REFRIGERANT	SATURATED VAPOUR PRESSURES (KPA)						
	-40°C	-20°C	0°C	20°C	40°C	60°C	70°C
R22	5	145	397	810	1,433	2,326	2,884
R32	76	304	712	1,374	2,377	3,831	4,776
R134a	-47	39	192	469	915	1,581	2,016
R404A	26	195	498	989	1,729	2,789	
R407C	19	179	467	936	1,648	2,668	3,318
R410A	76	303	704	1,353	19	3,749	4,631



# INSULATED COPPER PIPE

Our insulated copper pipes are made out of high quality pipes according to Japanese Standard JIS H3300 C1220T and ASTM B280 which is insulated with three layer of insulation.

## THREE - LAYER INSULATION



## INSULATION PROPERTIES :

- Inner insulation is made of extruded polyethylene which has a good compression strength
- Closed cell cross-linked polyethylene which has a very good thermal conductivity
- Average density : 25-30 kg/m<sup>3</sup>
- Thermal conductivity < 0.040 W/mK
- Working temperature : -50oC until 120oC
- Fire Retardant : Self extinguish

## COPPER PIPE SPECIFICATION :

Chemical Composition : Cu 99.9% min ; P : 0.015 – 0.040%

Temper : Soft Temper

Minimal Tensile Strength : 205 Mpa

Elongation : 40% min

## FEATURES / BENEFITS :

- Ready for use and easy to install, the copper pipe has been insulated with three layer insulation
- The insulated copper pipe is supplied in continuous 15 – 30 meters coils, eliminating the need to join the insulation
- Saves time & installation cost
- Good compression resistance insulation and fire retardant
- Suitable for R410A, R407 and also R32 refrigerant



## ARTIC INSULATED COPPER PIPE

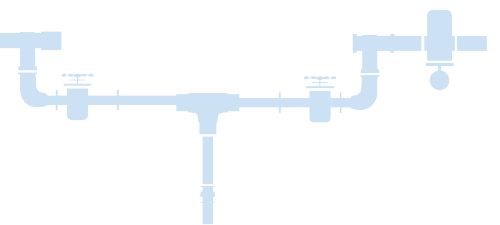
TYPE	COPPER PIPE OD X THICKNESS	INSULATION ID X THICKNESS	LENGTH (m)	SAFETY PRESSURE AT 50°C	
				psi	kPa
RM 2330	1/4" x 0.50 mm	8 x 10 mm	30	850	5861
	3/8" x 0.50 mm	12 x 10 mm		727	5013
RM 2430	1/4" x 0.50 mm	8 x 10 mm	30	850	5861
	1/2" x 0.60 mm	15 x 10 mm		537	3705
RM 2515	1/4" x 0.50 mm	8 x 10 mm	15	850	5861
	5/8" x 0.65 mm	18 x 10 mm		462	3186
RM 3515	3/8" x 0.50 mm	12 x 10 mm	15	727	5013
	5/8" x 0.65 mm	18 x 10 mm		462	3186
RM 4615	1/2" x 0.60 mm	15 x 10 mm	15	537	3705
	3/4" x 0.70 mm	22 x 10 mm		412	2846

## TATEYAMA INSULATED COPPER PIPE

TYPE	COPPER PIPE OD X THICKNESS	INSULATION ID X THICKNESS	LENGTH (m)	SAFETY PRESSURE AT 50°C	
				psi	kPa
JP 2330	1/4" x 0.60 mm	8 x 10 mm	30	1125	7760
	3/8" x 0.60 mm	12 x 10 mm		727	5013
JP 2430	1/4" x 0.60 mm	8 x 10 mm	30	1125	7760
	1/2" x 0.65 mm	15 x 10 mm		546	3765
JP 2520	1/4" x 0.60 mm	8 x 10 mm	20	1125	7760
	5/8" x 0.80 mm	18 x 10 mm		572	3946
JP 3520	3/8" x 0.60 mm	12 x 10 mm	20	727	5013
	5/8" x 0.80 mm	18 x 10 mm		572	3946
JP 4620	1/2" x 0.60 mm	15 x 10 mm	20	546	3765
	3/4" x 0.89 mm	22 x 10 mm		521	3599

## OEM BRAND BY TATEYAMA

TYPE	COPPER PIPE OD X THICKNESS	INSULATION ID X THICKNESS	LENGTH (m)	REMARKS
JP 2305	1/4" x 0.60 mm	8 x 10 mm	5	Flared
	3/8" x 0.60 mm	12 x 10 mm		
JP 2305F	1/4" x 0.60 mm	8 x 10 mm	5	
	3/8" x 0.60 mm	12 x 10 mm		
JP 2405	1/4" x 0.60 mm	8 x 10 mm	5	
	1/2" x 0.65 mm	15 x 10 mm		
JP 2405F	1/4" x 0.60 mm	8 x 10 mm	5	
	1/2" x 0.65 mm	15 x 10 mm		





# **TATEYAMA**

High Quality Seamless Copper Pipe

Untuk informasi lebih lanjut hubungi :