



**KWALITY**  
PIPE & TUBE INDUSTRIES  
AN ISO 9001:2015 COMPANY

**MANUFACTURER'S & EXPORTERS OF  
COPPER & COPPER ALLOY PRODUCTS**

RoHS Compliant Copper Tubes for  
Air Conditioning & Refrigeration (ACR)



[WWW.KWALITYPIPE.COM](http://WWW.KWALITYPIPE.COM)

Section

# Introduction



“  
**Your Trust in our  
Quality**”

## Company Profile

Kwality Pipe & Tube Industries was founded in early 70's under the leadership of Shri. Ramanlal B Shah. He had established a reputed name as a manufacturer & exporter in the field of Copper & Copper Alloys Products. Having it's a state of art manufacturing plant Situated in Atak Pardi, Dharampur Road, Valsad, Gujarat. The plant area is approximately 20000 sq.ft. with all modern machinery and equipment. We have 15 skilled & experienced staff and a labour strength of 70 workmen. Company's Head office is in the heart of the market in Gulalwadi, Mumbai. Kwality Pipe & Tube Industries enjoys a strong presence in dispatching high-quality hot extruded & cold drawn Copper & Copper Alloys Products as per IS, ASTM, BS, DIN, JIS, or to client specification and standards

In an increasingly competitive global economy, the companies that endure will meet the challenges of changing technologies. We have met and will continue to meet these challenges with substantial investments in skilled man power and state of the art equipment.

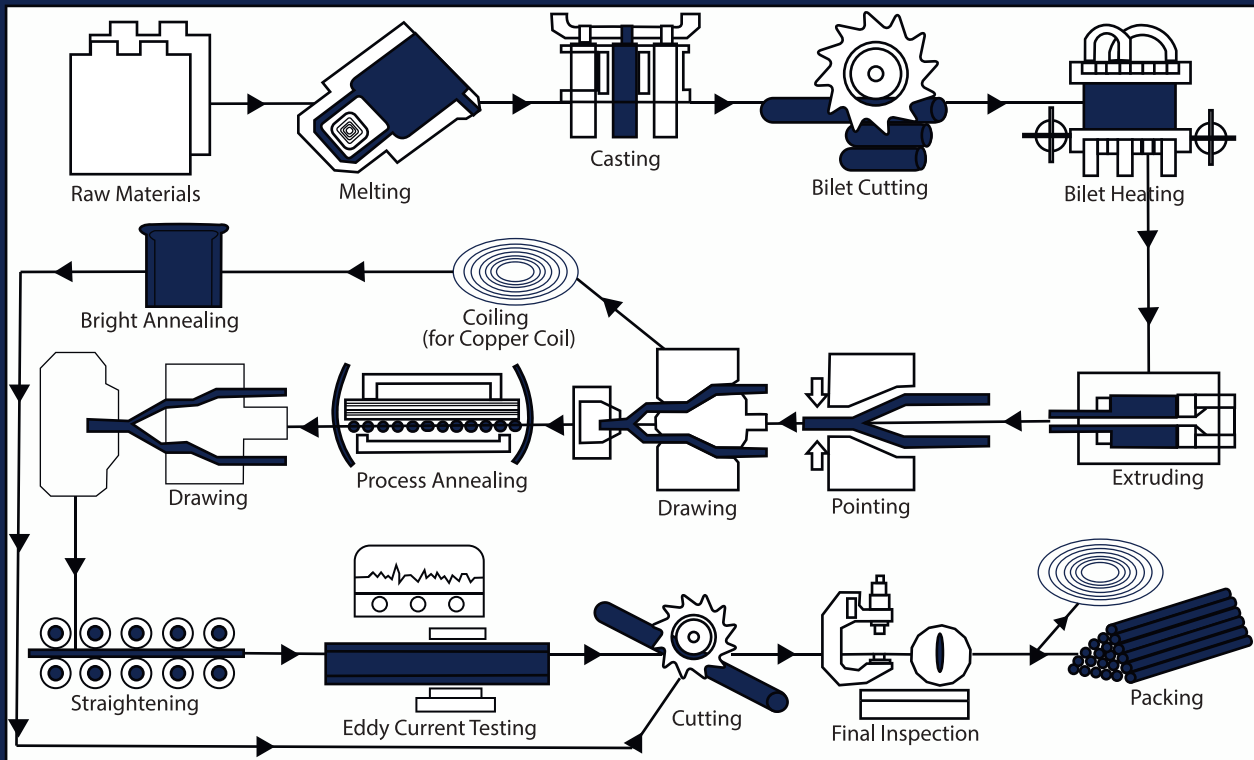
We are leaders in our field and are involved in manufacturing an extensive range of high quality extruded and cold drawn seamless tubes, solids, rods, sections and profiles in copper based alloy products for a wide range of engineering industries. We have the capability and flexibility to meet unique product requirement and exact specifications. We have sophisticated manufacturing facilities and a team of qualified, experienced and highly motivated staff in production and sales to meet customers ever growing quality and service expectation.



**Ramanlal Shah**

Founder

# Manufacturing



## Manufacturing process for Copper & Copper Alloy Products

Kwality Pipe & Tube Industries is involved in highly advanced technological processes to manufacture products which involve Cold drawing by sophisticated drawbenches, Intermediate process annealing by electric furnaces, Final annealing by bright annealing furnaces, Straightening & Coiling process, final inspection & testing.

Incoming Raw Material is tested in Laboratory and then issued to Cold drawing. This material undergoes pickling, if required. Then pointing, cold drawing and if required intermediate annealing. The Tubes, Rods, Sections are straightened. Tubes undergo Eddy current testing/Hydrostatic testing. The products undergo annealing if customer require them in soft temper or drawn further if required Half Hard/ Hard Temper. The finished products undergo Visual check, Dimensional check, flaring, Flattening test. Physical properties and Grain size test are also carried out before Packing and Dispatch.

Section

# Quality & Testing

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**QUALITY COMES NOT FROM INSPECTION,  
BUT FROM IMPROVEMENT OF THE  
PRODUCTION PROCESS**

*-W.Edwards Deming*



## Testing Facilities

- Chemical Analysis
- Physical Analysis
- Hardness Testing
- Hydrostatic Testing
- Pneumatic Testing
- Stress Corrosion Testing
- Dimensional Inspection
- Destructive testing flattening ,Drift test
- Bend Test
- NDT Eddy Current Testing

# RoHS Compliant Copper Tubes for ACR

We would like to introduce ourselves as Manufacturers of “Kwality Copper Tubes” for VRV/VRF Application. Kwality has once again spearheaded in developing and introducing eco-friendly CFC-free compatible and RoHS compliant copper tubes to help the Indian Industry for speedy phase out usage of CFCs. Kwality Copper Tubes ensures consistent quality ACR grade Copper tubes for new generation high-end VRV/VRF/Multi-V/DVM Plus/City Multi high efficiency and large capacity Air-conditioning systems.



Kwality Copper Tubes are produced by using

- Floating Mandrel technique during Re-drawing, for 360 degree consistent Concentric Tubes
- Total loss lubricant during Re-drawing and Inert atmospheric vacuum type Bright Annealing furnaces for ultra clean tubes with low residual content below 0.038gm/sq.mtr.
- Advanced Eddy Current Testing for defect-free 100% flawless tubes.
- Electronic Temperature and process controlled Bright Annealing Process for consistent Hardness uniformity along the entire tube length, circumference and bright mirror finish.
- R410A Refrigerant & R410A Compatible Copper Tubes.



KWALITY Pipes has a unique manufacturing process and laboratory to confirm that the total residue does not exceed 0.038g/m<sup>2</sup> as specified in EN12735-1 ASTM B280. After cleaning all tubes are individually end-capped to maintain their internal cleanliness. All straight tubes are manufactured in 5.8mts/3mts length for ease of movement and are bundled and wrapped in plastic for maximum protection. Individual coils are wrapped in Plastic, packed into Cardboard Cartons or in Wooden Boxes.

# RoHS Compliant Copper Tubes for ACR

## TECHNICAL SPECIFICATION COPPER TUBES

Standard	JIS H3300	ASTM B-68	BS 2871 PART 3	DIN 1785	IS 2501	BS 2871 PART 2	IS 2501
Symbol	C 12200	C 12200	C 106	SfCu 25	DHP IS191 PART VIII	C 101	ETP COPPER
Cu	99.9 Min	99.9 Min	99.85 Min	99.9 Min	99.8 Min	99.90** Min	99.90** Min
Sn	-	-	0.01 Max	-	0.01	-	-
Pb	-	-	0.01 Max	-	0.01	0.005	0.005
Ni	-	-	0.10 Max	0.01 Max	0.10 Max	-	-
Fe	-	-	0.03 Max	-	0.03	-	-
As	-	0.01 Max	0.05 Max	-	0.05	-	-
P	0.015-0.040	0.015-.040	0.013-.050	.015-.040	0.015-0.10	-	-
Total Impurities Max.	-	-	0.06*	-	0.06	0.03*	0.03*
Condition	O 1/2H H	050 - 060	M1/2H O	F 25	O,1/2H,HD	O M	O,1/2H,HD
Yield Strength N/mm2	-	-	-	150-240	-	-	-
Tensile N/mm2	205 Min 245-325 315Max.	-	-	250 Min	205Min 235Min 235Min 280Min	200 - 250 Min. 270 Min.	205Min 235Min 265Min 280Min
Elongation %	40% Min.	-	-	30% Min.	25%	40% Min.	25% Min
Hardness HV 5	-	-	105 Min 80-100 60 Max	-	-	100 Max 60 Max	40% Min 25% Min
Grain Size Mm (75X)	0.25-0.06-	0.015-0040 0.040 Min	0.05 Max	-	-	-	-

Excluding Silver, Arsenic or Copper

Kwality Pipe & Tubes Industries meets the mandatory inspection requirements

<b>CHEMICAL COMPOSITION</b>	Copper + Silver = minimum 99.90%, Phosphorus = minimum 0.015%. max 0.040%
<b>CARBON CONTENT TEST</b>	Window based software determines the content of carbon on the inner surface of copper tubes and fittings using combustion method
<b>TENSILE STRENGTH</b>	Kwality Pipes have been tested to the best of its tensile strength keeping in mind all the testing norms in the industry.
<b>NON-DESTRUCTIVE TEST</b>	Each tube is subjected to an Eddy Current test for detection of local defects

## Section

# Size Guide

## SIZE USED FOR VRV/VRF AIR - CONDITIONING TUBING

SR.NO.	SIZE (MM)	SIZE (INCHES)	TOLERANCE IN OD	THICKNESS IN MM	TOLERANCE IN THK	TEMPER	LENGTH	WEIGHT	MAX WORKING PRESSURE IN MPA	BURSTING PRESSURE IN MPS
1	6.4 MM	1/4"	+/- 0.08 MM	0.80 MM	+/- 0.10 MM	SOFT COIL	50'	1.875	13.80	68.3
2	9.5 MM	3/8"	+/- 0.08 MM	0.80 MM	+/- 0.10 MM	SOFT COIL	50'	2.975	8.40	41.5
3	12.7 MM	1/2"	+/- 0.08 MM	0.80 MM	+/- 0.10 MM	SOFT COIL	50'	4.050	6.00	29.5
4	15.9 MM	5/8"	+/- 0.09 MM	1.00 MM	+/- 0.15 MM	SOFT COIL	50'	6.300	5.90	29.5
5	19.1 MM	3/4"	+/- 0.09 MM	0.80 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	1.240	12.5	22.9
6	22.2 MM	7/8"	+/- 0.09 MM	0.80 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	1.460	10.6	19.4
7	25.4 MM	1"	+/- 0.12 MM	0.88 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	1.840	10.2	18.6
8	28.6 MM	1 1/8"	+/- 0.12 MM	1.00 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	2.330	10.3	18.8
9	31.8 MM	1 1/4"	+/- 0.12 MM	1.10 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	2.880	10.2	18.6
10	34.9 MM	1 3/8"	+/- 0.12 MM	1.21 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	3.480	10.2	18.6
11	38.1 MM	1 1/2"	+/- 0.12 MM	1.32 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	4.150	10.2	18.6
12	41.3 MM	1 5/8"	+/- 0.12 MM	1.43 MM	+/- 0.15 MM	1/2 HARD TUBE	10'	4.480	10.2	18.6

## LIGHT WEIGHT SIZES USED FOR AIR CONDITIONING APPLICATION

SR.NO.	SIZE (MM)	THICKNESS IN MM	TEMPER	LENGTH	APROX WEIGHT PER NO. IN KGS
1	6.4 MM	0.65 MM	SOFT COIL	50'	1.5
2	9.5 MM	0.65 MM	SOFT COIL	50'	2.5
3	12.7 MM	0.71 MM	SOFT COIL	50'	3.5
4	15.9 MM	0.71 MM	SOFT COIL	50'	4.5
5	19.1 MM	0.81 MM	SOFT COIL	50'	6.4
6	19.1 MM	1.00 MM	HARD TUBE	10'	1.6
7	22.2 MM	1.00 MM	HARD TUBE	10'	1.8
8	25.4 MM	1.00 MM	HARD TUBE	10'	2.1
9	28.6 MM	1.00 MM	HARD TUBE	10'	2.4
10	31.8 MM	1.10 MM	HARD TUBE	10'	2.9
11	34.9 MM	1.20 MM	HARD TUBE	10'	3.5
12	38.1 MM	1.35 MM	HARD TUBE	10'	4.3
13	41.3 MM	1.45 MM	HARD TUBE	10'	5
14	44.5 MM	1.55 MM	HARD TUBE	10'	5.8

Section

# Product Range

## GRADE

COPPER : *DHP, DPA, ETP, OFHC, DOW, Tellurium Copper*

BRASS : *63/37 Brass, 70/30 Brass, 85/15 Brass, Admiralty Brass, Aluminium Brass, Naval Brass, Arsenic Brass, Aluminium Bronze, Leaded Brass, Forging Brass, High Tensile Brass*

CUPRONICKEL : *95/5, 90/10 & 70/30 Alloys*

## ***Copper & Copper Alloy Tubes in Straight & Coil Form***



### BRIGHT ANNEALED PANCAKE COIL

Sizes	:	1/8"(3.2mm)OD to 1"(25.4mm)OD
Length	:	50ft/100ft
Thickness	:	10 s.w.g(3.2mm) to 27s.w.g(0.4mm)
Temper	:	O



### L.W.C (LEVEL WOUND COILS)

Sizes	:	1/4"(6.34mm)OD to 5/8 (15.8mm)OD
Length	:	In continues length upto 1000mtrs
Thickness	:	18 s.w.g (1.21mm) to 31 s.w.g(0.27mm)
Temper	:	O



## P.V.C. COATED TUBES & COILS

Sizes	: 1/8"(3.2mm)OD to 1" (25.4mm)OD
Length	: In cut length from 2mtr to 14mtr In continues length from 15mtr to 1000mtr
Temper	: O for soft coils H/HH for straight pipes
P.V.C Thickness	: 0.5mm to 2mm



## STRAIGHT BUS PIPES & TUBES

Sizes	: 2mm OD to 250mm OD
Length	: Up to 10mtr or as required
Thickness	: 0.30mm to 20mm
Temper	: O/HH/H



## TUBES FOR PLUMBING & MEDICAL GASES

Sizes	: 6mm OD to 159mm OD
Thickness	: 0.5mm to 2.5mm as per Table X, Table Y, Table Z
Length	: 10 Feet or as required
Temper	: H/HH



## COPPER TUBES FOR TERMINAL ENDS

Sizes	: 3mm OD to 100mm OD
Length	: Up to 5mtr or as required
Thickness	: 0.50mm to 20mm
Temper	: O/HH/H



## COPPER & COPPER ALLOY FITTINGS

Sizes	: 6mm to 250mm
Shapes	: Elbows, Tees, Couplings, Reducers or any non standard type.
Types	: Seamless, Welded, Flarred, Unflarred Shouldered, Threaded
Grade	: Copper, CuproNickel, Brass, Gunmetal etc

Section

# Work With Us



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