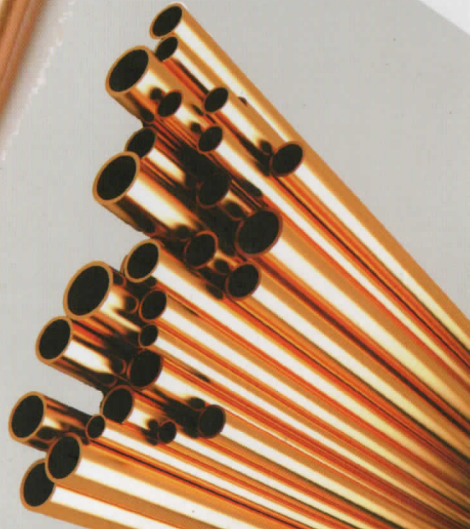


Manufacturer & Exporter of Copper and Copper Alloy Products



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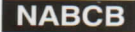
INDIGO

INDIGO METALLOYS PVT LTD

Pursuing excellence, Redefining trends



ISO 9001:2008



QMS 001

Enterprise's Principle

"Indigo is committed to provide complete range of Copper & Copper base alloy products to its clients and assist the clients in getting best quality raw materials which is most suitable to their requirements.

The endeavour at Indigo is always to exceed the expectation of the client so as to keep resetting our Quality & Service goals higher and higher implementing the Total Quality Management System."

About Us

Indigo Metalloys Private Limited was founded in 2007 with state of art manufacturing plant at Umergaon in Gujarat having installed capacity at 6,000 metric tonnes per annum.

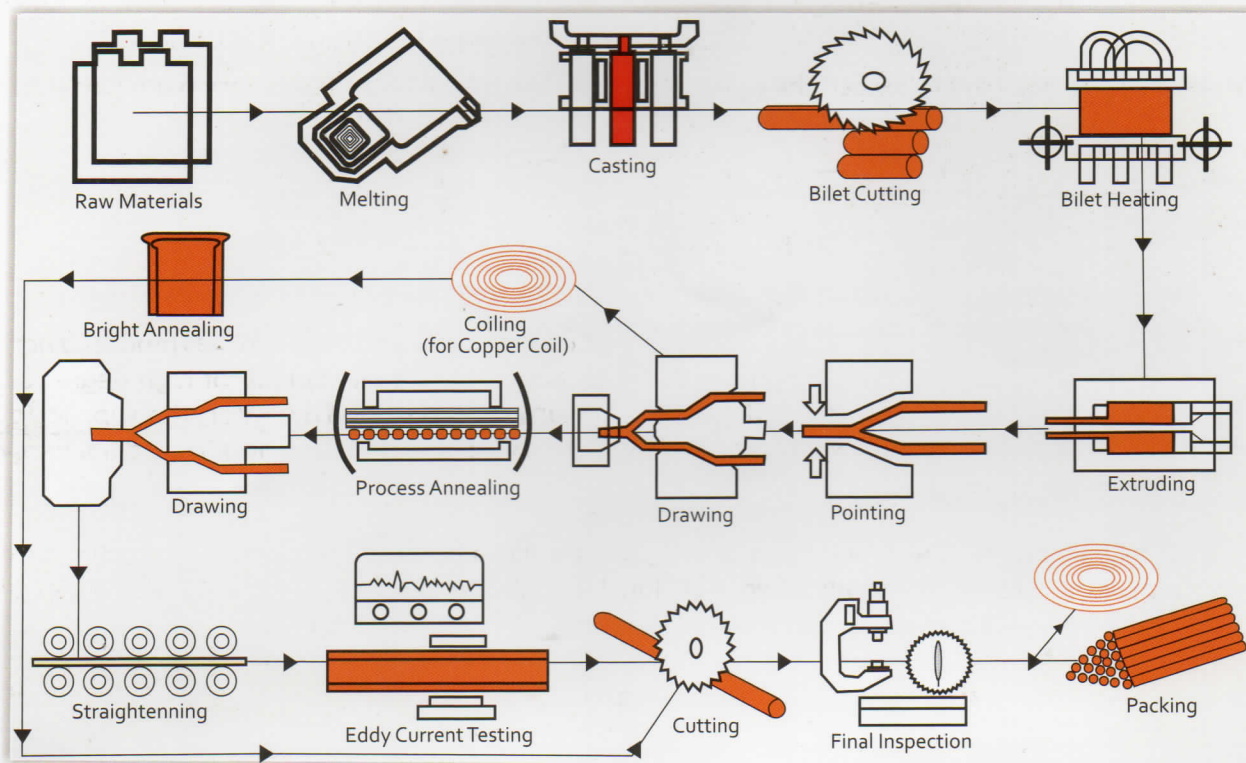
The Company manufactures Copper and Copper based alloy products & our tireless endeavour has produced rich results. Indigo products are very well accepted in the Domestic and International markets for high degree of customer loyalty and satisfaction. Indigo is an ISO 9001-2008 Company duly accredited by TUV and is a supplier to major OEM's and Tier 1 suppliers across the world. We cater products to Oil & Gas, Ship Building, Air-conditioning & Refrigeration and General Engineering.

At Indigo, work excellence and in-time delivery have always been significant in the entire gamut of production and sale. All products manufactured are truly committed to National and International Standards viz ASTM, DIN, IS, BS, JIS, EN etc.

Indigo headquartered in Mumbai has built up high professional leadership team supported by operational and managerial staff.



Manufacturing Process for Copper & Copper Base Alloy Products



At Indigo highly advanced technological processes are used to manufacture products which involve Melting in induction furnaces, Extrusion by 1600 metric tonne oil hydraulic extrusion press, Cold drawing by pilger mills, sophisticated drawbenches & modern bull blocks, Intermediate process annealing by gas fired furnaces, Final annealing by bright annealing furnaces, Straightening & coiling process, & final inspection & testing

Incoming Raw Material is tested in laboratory and then issued to melting shop. This material is molten cast in watercooled molds. The cast logs are cut into billets of suitable length. These billets are pre-heated to proper extrusion temperature and extruded into mother Tube/ Rods/ Section undergo pickling, if required. Then undergo pointing, cold drawing and if required intermediate annealing. The Tubes, Rods, Sections are straightened. Tubes undergo Eddy current testing/ Hydrostatic t 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 despatch.

Quality Testing

Product quality has been one of the hallmarks at Indigo. Each product line undergoes a battery of stringent and sophisticated quality control tests to ensure that every batch of product is of the highest quality.

- ◆ 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



Eco-friendly CFC-free Refrigerant Compatible & "ROHS Compliant" Copper Tubes for ACR

We would like to introduce ourselves as manufactures of "INDIGO COPPER TUBES" for VRV/VRF Application. Our Brand Name "INDIGO" is approved by Daikin, Samsung, LG, Voltas, Carrier, Blue Star & Mitsubishi as a premium vendor of Copper Tubes for VRV/VRF and non VRV applications.

Indigo Metalloys has once again spearheaded in developing and introducing eco-friendly CFC- free compatible and RoHS compliant copper tubes to help Indian industry for speedy phase out usage of CFC's.

Indigo Green 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

Indigo Green Copper Tubes are produced by using

- ♦ Floating Mandrel technique during Re-drawing, for 360 degree consistent CONCENTRICTUBES.
- ♦ Total loss lubricant during Re-drawing and Inert atmospheric vacuum type Bright annealing furance for ultra clean tubes with low residual content below 0.038 gm/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 & Compatible Copper Tubes.



We also manufacture RoHS Compliant Mother Copper Tubes for Producing CFC-Free Compatible Copper Tubes

INDIGO Pipes has a unique manufacturing process and laboratory to confirm that the total residue does not exceed 0.03g/m² 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 also wrapped in Plastic, packed into Cardboard Cartons in Wooden Boxes

Indigo Metalloys meets the mandatory inspection requirements

Chemical Composition	Copper + Silver = minimum 99.90%, Phosphorous = minimum 0.015. max 0.040%
Carbon content Test	Window based software determines the content of carbon on the inner surface of copper tubes and fittings using combustion method.
Tensile Strength	INDIGO pipes have been tested to the best of its tensile strength keeping in mind all the testing norms in the industry
Non-Destructive Test	Each tube is subjected to an Eddy current test for detection of local defects

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	0.15-0.40	0.015-0.040	0.013-0.050	0.015-0.040	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-	0.015-0.040 0.040 Min	0.05 Max	-	-	-	-

Size used for VRV Air-Conditioning Tubing

SR. No.	SIZE (MM)	SIZE (INCHES)	TOLERANCE IN OD	THICKNESS IN MM	TOLERANCE IN THICK	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	0-COIL FORM	50'	1.875	13.80	68.3
2	9.5 MM	3/8"	+/-0.08 MM	0.80 MM	+/-0.10 MM	0-COIL FORM	50'	2.975	8.40	41.5
3	12.7 MM	1/2"	+/-0.08 MM	0.80 MM	+/-0.10 MM	0-COIL FORM	50'	4.050	6.00	29.5
4	15.9 MM	5/8"	+/-0.09 MM	1.00 MM	+/-0.15 MM	0-COIL FORM	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"	+/-0.12 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	THICKNESS IN MM	TEMPER	LENGTH	APROX WEIGHT PER NO. IN KGS
1	6.4 MM	0.65 MM	0-COIL FORM	50'	1.5
2	9.5 MM	0.65 MM	0-COIL FORM	50'	2.5
3	12.7 MM	0.71 MM	0-COIL FORM	50'	3.5
4	15.9 MM	0.71 MM	0-COIL FORM	50'	4.5
5	19.1 MM	0.81 MM	0-COIL FORM	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

Product Range

An impressive product range is the first step towards entering a competitive global market.

At Indigo we are committed to providing our client with the best quality raw material most suitable to their requirements. We offer a spectrum of Copper & Copper base alloy products which are manufactured using premium quality raw materials with the best manufacturing techniques following series of stringent quality controlled measures. Our products have varied application in Industries such as Airconditioning & Refrigeration, Plumbing & Waterlines, Medical gas, Instrumentation, Electricals, Defence, Gen.Engineering, Oil & Gas, Dessalination Plants, Architectural & Furniture work. Indigo produces Copper & Copper alloy products as per National & International standard based on customers specification.

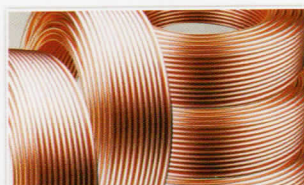
	GRADE
COPPER :	DHP, DLP, ETP, OFHC, DOW, Tellurium Copper,
BRASS :	63/37Brass, 70/30 Brass, 85/15 Brass, Admiralty Brass, Aluminium Brass, Naval Brass, Arsenic Brass, Aluminium Bronze, Leaded Brass, Forging Brass, High Tensile Brass.
CUPRONICKEL :	95/5, 90/10 & 70/30 Alloys.

Copper & Copper Alloy Tubes in Straight & Coil Form



Bright Annealed
Pancake Coils:

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



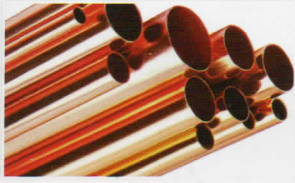
L.W.C(Level Wound
Coils) :

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



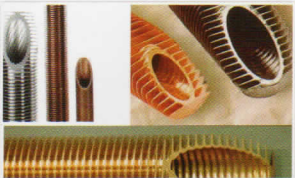
P. V. C. (Poly Vinyl
Chloride) Coated Tubes
& Coils :

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	: 0.5mm to 2mm
Thickness	



Straight Pipes & Tubes :

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



Finned Tubes :
(19/26 finns per inch)

Sizes	:	5/8"(15.8mm)OD & 3/4"(19.044mm)OD
Length	:	Specific length or up to 10 mtr
Thickness	:	1.6mm to 1.2mm
Temper	:	HH
Type	:	Intergroove Integrally Finned Tubes Internally Grooved Tubes, Outer grooved Finned Tubes, Spiral Finned Tubes.



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



Cappillary Tubes :

Sizes	:	0.030"ID to 0.090" ID
Thickness	:	0.7mm to 0.4mm
Length	:	100ft standard or upto 500mtrs
Temper	:	O



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



Pre-Insulated Tube:

Sizes	:	1/4" to 3/4"
Tube	:	1.6mm to 0.5mm
Thickness	:	
Insulation	:	6mm to 25mm
Thickness	:	
Length	:	3mtr to 30mtr or any fix length