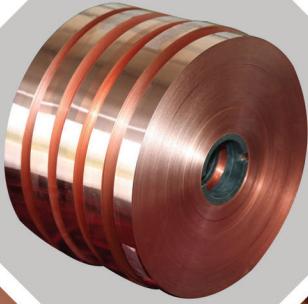
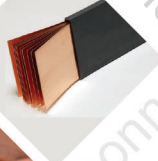
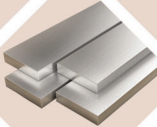




tamra Profile
copper strip
copper foil
connectors

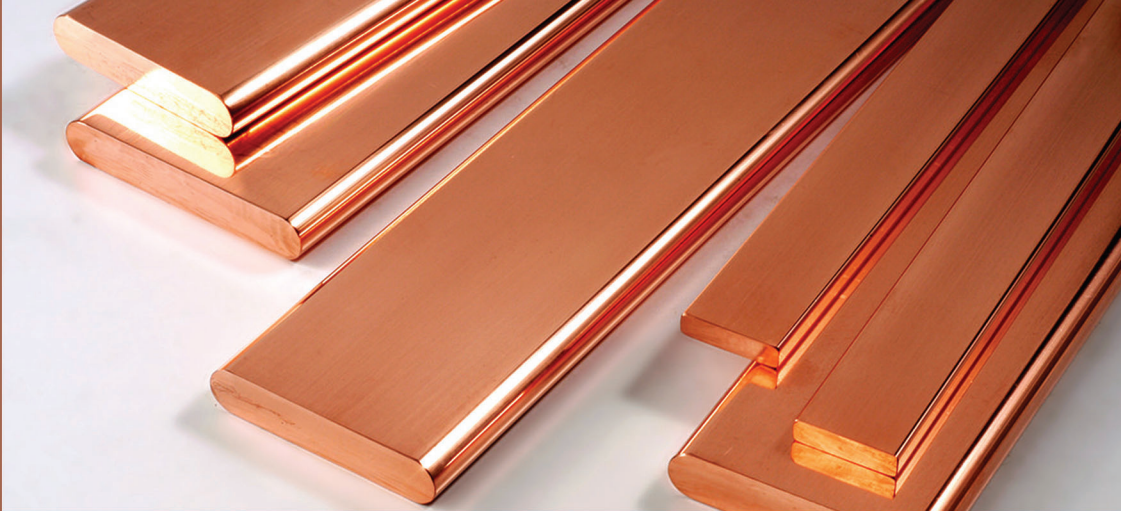


SIMPLY COPPER



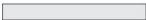
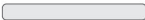
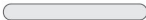
tinned busbar


TAMRA®



BARS & PROFILE

FLAT - ROLLED & EXTRUDED

TECHNICAL SPECIFICATIONS		
Chemical and mechanical characteristics in accordance with the International standards ASTM, DIN, UNS or others.		
SIZES		
Width from 5 to 150 mm	Thickness from 1 mm to 15 mm	Camber As per ASTM
RADIUS		
SQUARE EDGE 	RADIUS EDGE 	FULL ROUND EDGE 
LENGTH		
Up to 9000 mm (depending the cross section), with a standard length tolerance of 100 mm.		
PLATING Tin plating 1 to 20 microns		

PROFILE

SIZE	
Diameter	Length
10 Sq.mm. to 3000 Sq.mm. (90 g/mtr. to 27 kg/mtr.)	Up to 6000 mm





ROD - Round, Square & Hexagonals

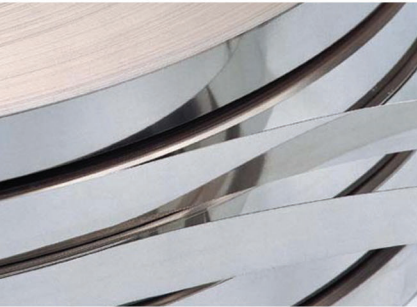
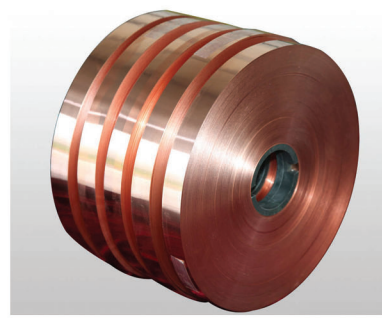
ROUND

SIZE			
Diameter	Length	Tolerance of length	
From 5 mm up to 85 mm	Up to 6000 mm	Standard	Shorten
		50 mm	3 mm

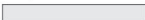
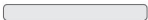
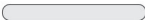
SQUARES AND HEXAGONALS (EXTRUDED & DRAWN)

SIZE				
Square	Hexagonals	Length	Tolerance on length	
From 5 mm Up to 50 mm	From 8 mm Up to 40 mm	Up to 6000 mm	Standard	Shorten
			50 mm	3mm

CROSS SECTIONS from 50 mm ² up to 4500 mm ²
LENGTH up to 6000 mm (depending the cross section).
EVERY PROFILE is designed according to the plan provide All characteristics : mechanical, dimensional, surface quality, contact surface, surface treatment, etc... are including in precise specifications.
OUR INTEGRATED PLANT , is capable enough in preparing precision tools and profiles.
SPECIFIC PROFILES can also be delivered in requisite rolls if so desired



COPPER STRIP

SIZE		
Width from 15 up to 150 mm	Camber as per ASTM, DIN, UNS or others	
Thickness from 0.10 mm up to 6 mm		
RADIUS		
SQUARE EDGE 	RADIUS EDGE 	FULL ROUND EDGE 
PLATING		
Tinning from 1 to 20 microns	Silver Plating from 1 to 5 microns.	
Total or partial plating		
PACKING		
Pancake coils with 400 up to 550 mm ID (other possibilities upon request)		
Standard weight : 30 up to 450 kgs upon the cross section.		



FLEXIBLE BARS

BARS

Standart length	2000 mm (-0/+5 mm), up to 4000 mm upon request
Strip thickness	0.10 and 1 mm
Strip width	from 6 up to 100 mm
Number of strips	from 2 up to 10 as per customers specification

COPPER Cu-ETP with a minimum copper content of 99.90%

Specifications	upon NFA 51 050, EN 13599
Conductivity	>100% IACS
HV	< 50
Tensile strength	$R_m > 200 \text{ N/mm}^2$
Elongation	After break : > 35%
Resistivity	$0.01724 \Omega \text{ xm/mm}^2$ at 20°C

INSULATING MATERIAL Black color insulating PVC self-extinguish

Thickness	1,5 - 2 mm
Specifications	upon BS 6746, DIN EN 50363, UL 94 VO
Elongation	> 200%
Tensile strength	> 15 N/mm ²

ELECTICAL CHARACTERISTICS

Dielectric rigidity	20 kV / mm
Tension of use	1000 V AC / 1500 V DC
Temperature of use	-40° up to + 105°C

CHEMICAL COMPOSITION										
Material designation		Composition %							Other elements (see note)	
		Element	Cu	Ag	Bi	O	P	Pb		
Symbol	Number								Total	Excluding
Cu-ETP	CW004A	min. max.	99,90 ⁽¹⁾ -	- -	- 0,0005	- 0,040 ⁽²⁾	- -	- 0,005	- 0,03	Ag. 0
Cu-FRHC	CW005A	min. max.	99,90 ⁽¹⁾ -	- -	- -	- 0,04 ⁽²⁾	- -	- -	- 0,04	Ag. 0
Cu-OF	CW008A	min. max.	99,95 ⁽¹⁾ -	- -	- 0,0005	- (3)	- -	- 0,005	- 0,03	Ag.
CuAg 0,04	CW0011A	min. max.	Balance -	0,03 0,05	- 0,0005	- 0,040	- -	- -	- 0,03	Ag. 0
CuAg 0,07	CW0012A	min. max.	Balance -	0,06 0,08	- 0,0005	- 0,040	- -	- -	- 0,03	Ag. 0
CuAg 0,10	CW0013A	min. max.	Balance -	0,08 0,12	- 0,0005	- 0,040	- -	- -	- 0,03	Ag. 0
CuAg 0,04P	CW0014A	min. max.	Balance -	0,03 0,05	- 0,005	- (3)	0,001 0,007	- -	- 0,03	Ag. P
CuAg 0,07P	CW0015A	min. max.	Balance -	0,06 0,08	- 0,0005	- (3)	0,001 0,007	- -	- 0,03	Ag. P
CuAg 0,10P	CW0016A	min. max.	Balance -	0,08 0,12	- 0,005	- (3)	0,001 0,007	- -	- 0,03	Ag. P
CuAg 0,04(OF)	CW0017A	min. max.	Balance -	0,03 0,05	- 0,0005	- (3)	- -	- -	0,0065	Ag. 0
CuAg 0,07(OF)	CW0018A	min. max.	Balance -	0,06 0,08	- 0,0005	- (3)	- -	- -	0,0065	Ag. 0
CuAg 0,10(OF)	CW0019A	min. max.	Balance -	0,08 0,12	- 0,0005	- 0 ⁽³⁾	- -	- -	0,0065	Ag. 0
Cu-PHC	CW0020A	min. max.	99,95 ⁽¹⁾ -	- -	- 0,0005	- (3)	0,001 0,006	- 0,005	- 0,03	Ag. P
Cu-HCP	CW0021A	min. max.	99,95 ⁽¹⁾ -	- -	- 0,0005	- (3)	0,002 0,007	- 0,005	- 0,03	Ag. P

NOTE : the balance of the other elements (excluding copper) is defined as the sum of Ag, As, Bi, Cd, Co, Cr, Fe, Mn, Ni, O, P, Pb, S, Sb, Se, Si, Sn, Te and Zn, excluding the other elements for which the value is already indicated.
⁽¹⁾ Including silver, up to a maximum of 0.015%.
⁽²⁾ An oxygen content of 0.060% is permitted, with a prior agreement between the seller and the buyer.
⁽³⁾ Then oxygen content must be in accordance with the hydrogen embrittlement test of EN 1976.

MECHANICAL CHARACTERISTICS																			
Designation			Size mm									Hardness				Tensile strength Rm	Yield point 0.2% Rp 0.2	Elongation	
Material		Hardness	Round, square hexagonal			Thickness			Widtht			HB		HV		N/mm²	N/mm²	A ₁₀₀ mm %	A %
Symbol	Number		from	over of	up to and including	from	over of	up to and including	from	over of	up to and including	min.	max.	min.	max.				
		D	2	-	80	0,5	-	40	1	-	200								
		H035*	2	-	80	0,5	-	40	1	-	200	35	65	35	65	-	-	-	-
Cu-ETP	CW004A	R200*	2	-	80	1	-	40	5	-	200	-	-	-	-	200	max. 120	25	35
Cu-FRHC	CW005A																		
Cu-OF	CW008A	H065	2	-	80	0,5	-	40	1	-	200	65	90	70	95	-	-	-	-
CuAg 0,04	CW0011A	R250	2	-	10	1	-	10	5	-	200	-	-	-	-	250	min. 200	8	12
CuAg 0,07	CW012A	R250	-	10	30	-	-	-	-	-	-	-	-	-	-	250	min. 180	-	15
CuAg 0,10	CW013A	R230	-	30	80	-	10	40	-	10	200	-	-	-	-	230	min. 160	-	18
CuAg 0,04P	CW014A																		
CuAg 0,07P	CW015A	H085	2	-	40	0,5	-	20	1	-	120	85	110	90	115	-	-	-	-
CuAg 0,10P	CW016A	H075	-	40	80	-	20	40	-	20	160	75	100	80	105	-	-	-	-
CuAg 0,04(OF)	CW017A	R300	2	-	20	1	-	10	5	-	120	-	-	-	-	300	min. 260	5	8
CuAg 0,07(OF))	CW018A	R280	-	20	40	-	10	20	-	10	120	-	-	-	-	280	min. 240	-	10
CuAg 0,10(OF)	CW019A	R260	-	40	80	-	20	40	-	20	160	-	-	-	-	260	min. 220	-	12
Cu-PHC	CW020A																		
Cu-HCP	CW021A	H100	2	-	10	0,5	-	5	1	-	120	100	-	110	-	-	-	-	-
		R350	2	-	10	1	-	5	5	-	120	-	-	-	-	350	min. 320	3	5
NOTE : 1 N/mm2 is equivalent in 1 MPa. * Annealing																			



MARKETING OFFICES

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Tel No. : +91 124 2666021

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101 Meadows, Sahar Plaza
Andheri Kurla Road, Andheri (East)
Mumbai - 400 059 (India)
Tel No. : +91 22 2496 0031

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Novel Tech Park No. 46/4, GB
Palyhousur Road
Bangalore 560 068
Tel No. +91 80 4956 8741

OVERSEAS

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Al Mussalla Towers, Bur Dubai,
P O Box: 111728, Dubai (UAE)
Tel No. +971 4 364 1223

WORKS

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Pathredi, Bhiwadi
Rajasthan - 301 707 (India)

Sankrail Industrial Park
Chaturbhujkati, Bhagabatipur
Andul Mauri, Howrah - 711 302 (India)