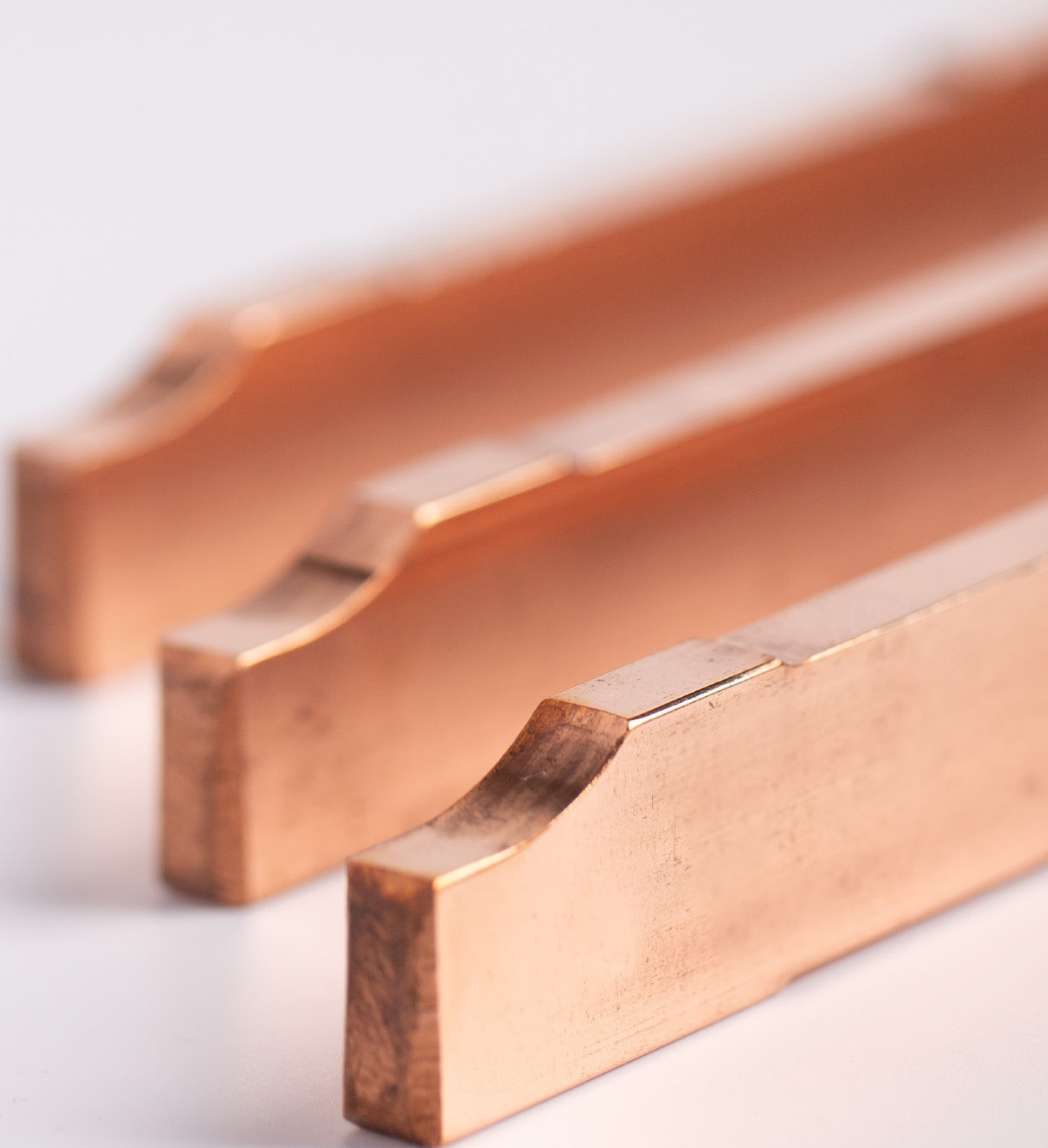


Copper Products for
Rotating Electrical Machines



Who We Are



For more than 20 years, Radhika Industries has been manufacturing drawn sections of Copper and Copper Alloys for use in rotating electrical machines. A family owned business, run by Engineering Graduates and Post Graduates.

Since the last 50 years our group of companies have been in the business of manufacturing, involving Forging of Steel and Copper for the Indian Heavy Industry and Manufacture of Work Wear Uniforms for export to Europe.

1 in 3

Radhika Industries is the OEM to the fourth largest railway network in the world. About 1 in 3 locomotives of “The Indian Railways” has a Traction Motor running on copper supplied by us.



Why Us



Helping Our Customers Reduce Manufacturing Time

Commutator Segments and Rotor Bars are made to close tolerances and consistent dimensions. The narrow band of dimensional variation ensures quick assembly of the Commutator and Rotor at our customers end.

High Quality Products with Complete Traceability

Well-designed systems and processes with complete traceability right from the raw material allow us to consistently meet the quality requirements of our customers. Along with all manufacturing facilities, we also have complete in-house testing facilities.

Customisation and Quick Delivery

Capability to effectively customise the properties achieved from an alloy. For example, we successfully achieved High Tensile Strength and High Conductivity in UNS C15000 Copper Zirconium, developed for the Indian Railways. Our in-house die making facility reduces our lead time to supply goods.

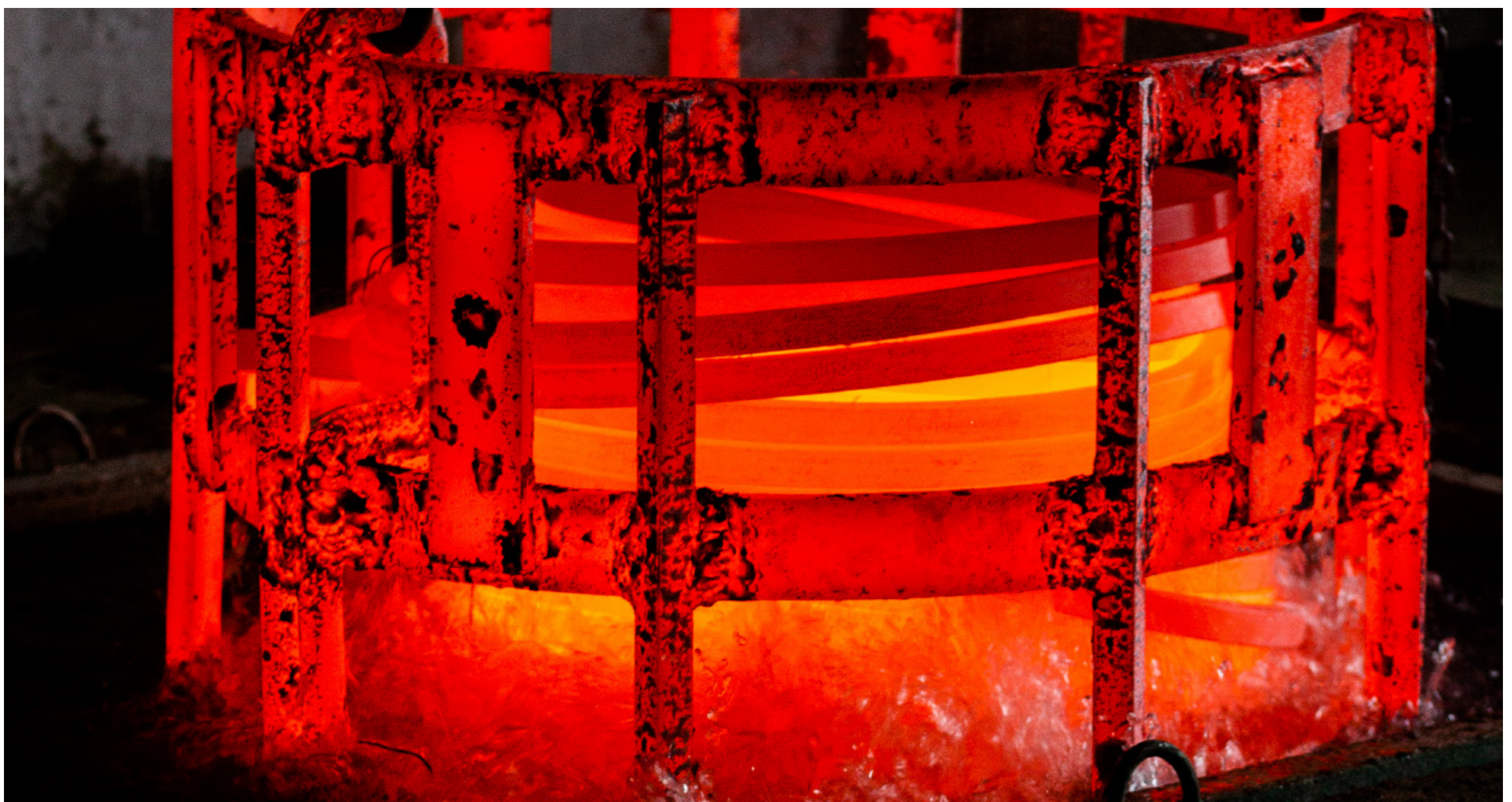
Environmental Consciousness

In the endeavour to reduce our carbon footprint, more than 50% of our electricity needs are fulfilled by solar energy. Rainwater is collected and used to recharge the water table and all effluents are duly treated before discharge.



Rotor Bars

The Rotors Bars are supplied in fully machined and ready to use condition as per customer specification. The orders can be fulfilled within short delivery times even with small order quantities.



Alloys used to manufacture Rotor Bars

Description	UNS Number	Nominal (%)				Typical Mechanical & Electrical properties		
		Cr	Zr	Cu + Ag	Oxygen	Tensile Strength	Elongation (%)	Conductivity (% IACS)
Oxygen Free Copper Cu-OFE*	C10100	-	-	99.99min	< 5 ppm	260-345	> 10	> 98
Oxygen Free Copper Cu-PHC	C10200	-	-	99.95min	< 10 ppm	260-345	> 10	> 98
Zirconium Copper CuZr*	C15000	-	0.10-0.20	Rem.	< 10 ppm	> 400	> 14	> 93
Chromium Copper CuCr1*	C18200	0.6-1.2	-	Rem.	< 10 ppm	> 320	> 13	> 88
Chromium Zirconium Copper CuCr1Zr*	C18150	0.3-1.2	0.03-0.30	Rem.	< 10 ppm	> 380	> 12	> 75
CuZn37	C27200	-	-	62-64	-	>370	> 12	> 27.6
CuZn15	C23000	-	-	84-86	-	>340	> 12	> 38.8

*Raw Material Sourced from Montanwerke Brixleg, Austria | Mitsubishi, Japan | Luvata, Finland

Sizes Available

- Width 60 mm maximum
- Thickness 40 mm maximum
- Length as per Customers Requirement

Specifications

- The Rotor Bars are manufactured according to the table provided or as per Customers Specification

Features

- Close dimensional tolerances, width 50 microns and thickness 30 microns
- High Tensile Strength
- High Conductivity



Commutator Segment

The Commutator Segments we supply are in ready to use condition and complete with Riser Slitting as per customers drawing. Our in-house die making facility allows us to supply small quantities within a short delivery period.



Alloys used to manufacture Commutator Segements

Description	EU Designation	UNS Number	Composition	
			Nominal Silver (%)	Oxygen Max ppm
Tough Pitch HC Copper - Cu - ETP	CW004A	C11000	-	400
Copper - 0.04% Silver - CuAg 0.04	CW011A	C11300	0.04	400
Copper - 0.07% Silver - CuAg 0.07	CW012A	C11500	0.07	400
Copper - 0.10% Silver - CuAg 0.10	CW013A	C11600	0.10	400
Copper - 0.17% Silver	-	-	0.17	400
OF Copper - 0.10% Silver - CuAg 0.10 (OF)	CW019A	C10700	0.10	10

Sizes Available

- Width 140 mm max
- Thickness as per Customers Drawing

Specifications

- ISO 356, JS 2801, BS 1434, IS 4519 or Customers Specification

Features

- The Trapezoidal Thickness of the Segment/Bar is within +/- 25 microns in the whole lot and within 20 microns within each box used for packing the Segment/Bar.
- A Negative Angle of Departure is always maintained in the Commutator Segments/Bars manufactured by us and the Convexity/Concavity is maintained within +/- 20 microns.
- All these strict quality controls ensure faster assembly and superior quality of the Commutator at the customers end.



Capability to Manufacture Complex Profiles

We have developed Rotor Damper Wedges used in Turbo Generators of Power Plants. The profile of the damper wedge is made with precise dimensional symmetry with respect to the center line.

We can develop other complex Typical and Atypical shapes made from a range of Copper Alloys as per customers specification and drawing.



Clients

Currently, suppliers for commutator segments and rotor bars to most of the traction motor manufacturers in India for designs of Hitachi, Alco, GE, ABB, BHEL and CLW.



Certificate

We are in the process of getting certified for IRIS.

ZERTIFIKAT ♦ CERTIFICATE ♦ 認証証書 ♦ CERTIFICADO ♦ CERTIFICAT



CERTIFICATE

The Certification Body
of TÜV SÜD South Asia Private Limited
certifies that

RADHIKA INDUSTRIES
69A, Co-operative Industrial Estate, Dada Nagar,
Kanpur - 208 022, INDIA

has implemented a Quality Management System
in accordance with **ISO 9001:2015**
For Scope of

**MANUFACTURE OF DRAWN SECTIONS/PROFILES OF
COPPER & COPPER ALLOYS**

The certificate is valid From **2021-06-20** until **2024-06-19**
Subject to successful completion of annual periodic audits
The present status of this Certificate can be obtained on www.tuvsud.com/en-in
Further clarifications regarding the scope of this certificate may be obtained by consulting the certification body

Certificate Registration No. **99 100 11920**
Date of Initial certification: **2010-08-17**
Issue Date: **2021-05-10**

Rahul Kale
Head of Certification Body
of TÜV SÜD South Asia Private Limited, **Mumbai**
Member of TÜV SÜD Group



Get in Touch

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