

Alloys and standards

Alloy	Standards Nearest international standards	Nominal composition %	Physical properties										Mechanical properties				
			Density	Electrical conductivity %IACS	Electrical resistivity at 20°C µΩcm	Thermal conductivity 20° to 200°C W/mK	Coefficient of expansion 20° to 200° c. x 10 ⁻⁶ K ⁻¹	Relative magnetic permeability	Young's modulus kN/mm ²	Tensile strength Mpa ≥ ; * = Mpa ≤	Yield strength 0.2% offset or 0.5% E.L.L. (1) Mpa ≥ ; * = Mpa ≤	Elongation 5.65 %S % ≥ ; * = % ≤	Hardness HB HRB	Impact strength KCU (1) or IZOD (2)			
CRM16E CuCrZr	ASTM: C18100-C18150 MIL 19311 RWMA class 2 SAE CA 184 BS 2874 CC 102 EN 12163, EN 12165, EN 12420, EN 12167 CW106C, CW105C DIN 17666 WN 2.1293 DIN 17672 DIN 44759 NFA 82100 ISO 5182 A2/3 ISO 1336	Cu : remainder Cr : 0,4 to 1 Zr : 0,03 to 0,25 Fe : ≤ 0,08 Other : ≤ 0,2	8,9	≥ 75	≤ 2,3	320	17	1,01	120	380	55	280	41	15	130		

There is no substitute for experience

Thanks to a multidisciplinary know-how in copper alloys, le Bronze Industriel is at the heart of wide industrial technologies, such as aerospace, shipbuilding, oil & gas, automotive, power, transport and metallurgy.

Located for 40 years in the heart of Champagne region, a brand new factory of 20 000 m² was inaugurated in 2004. The same year, a major investment was carried out with the introduction of a new extrusion press rated at 5400 tons, this was installed to satisfy an ever increasing demand in the international markets that we serve.

75% of our copper alloys production is exported towards 45 countries.

We offer a complete range of semi-finished products (round bars, hollow bars, flat bars, polygons, plates).

With a task force of 300 people, including 60 for machining, Le Bronze is also supporting its customers in the conception and fabrication of any kind of parts.

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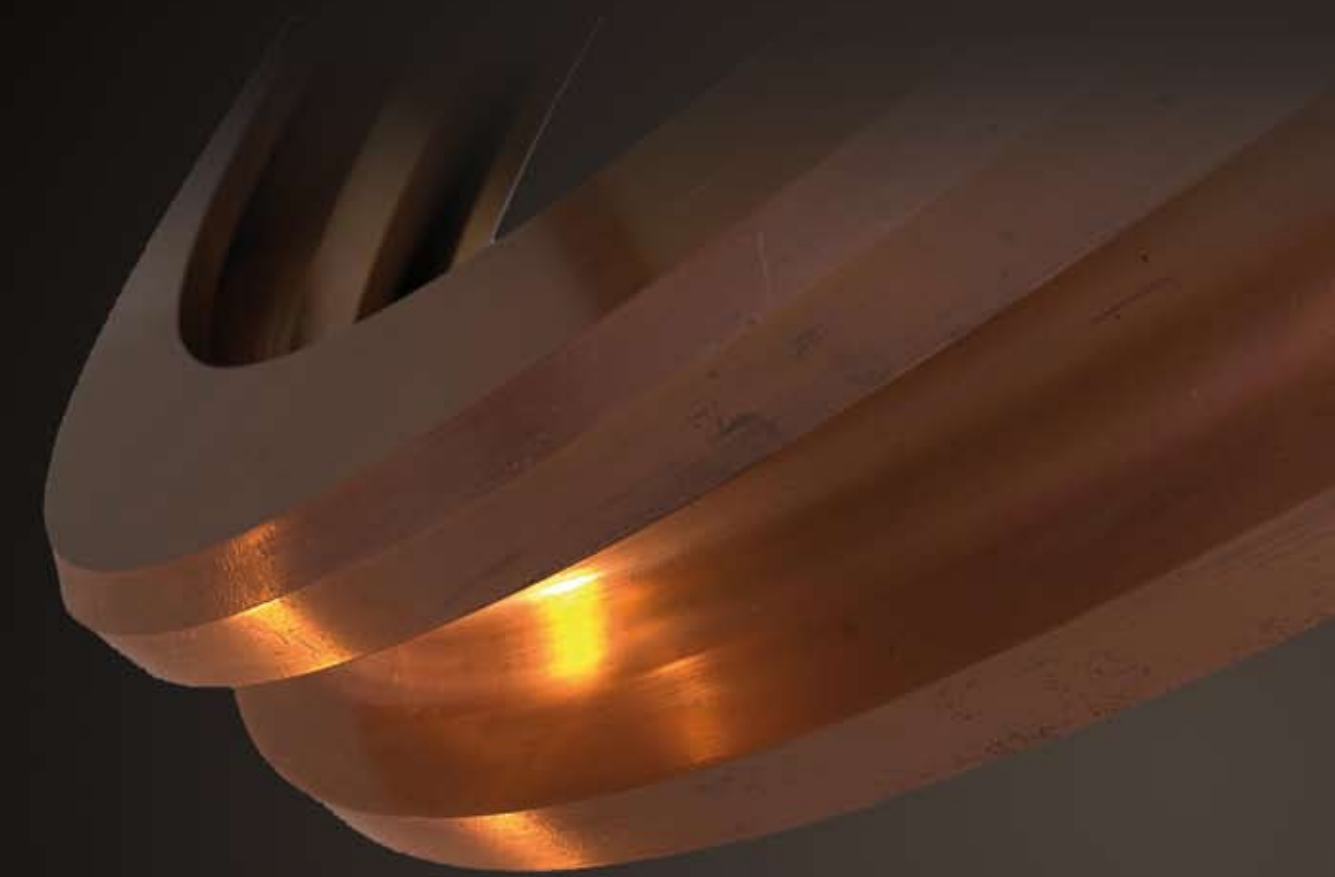
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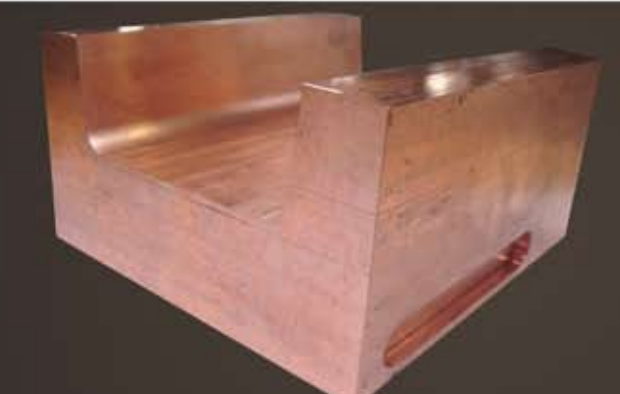
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2011 - Conception - réalisation : Bol d'Air / www.bol-d-air.net - Crédit photos : Jean-Marie Proneau (Aving).



le bronze industriel

Casting wheels & Dam blocks



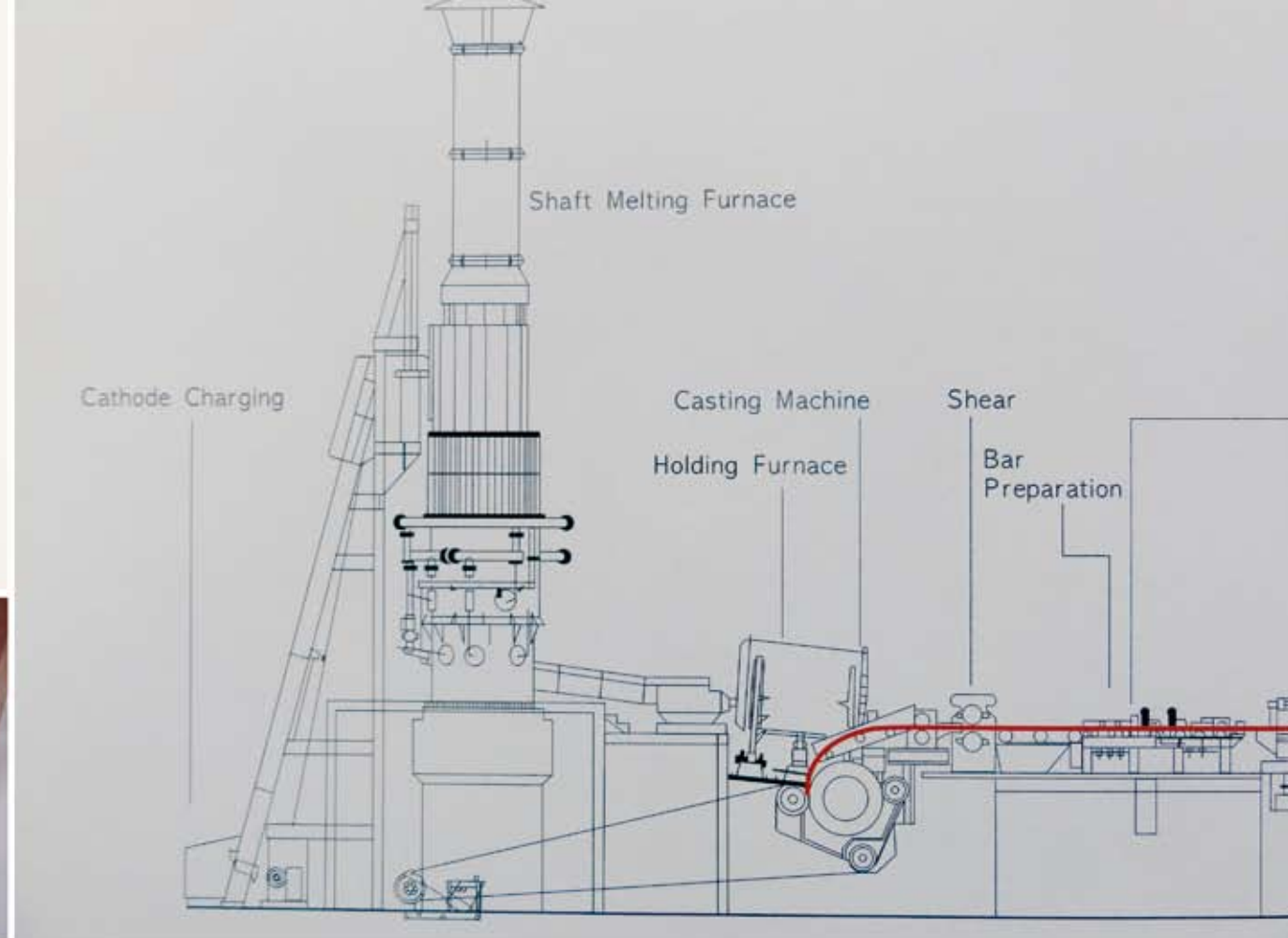
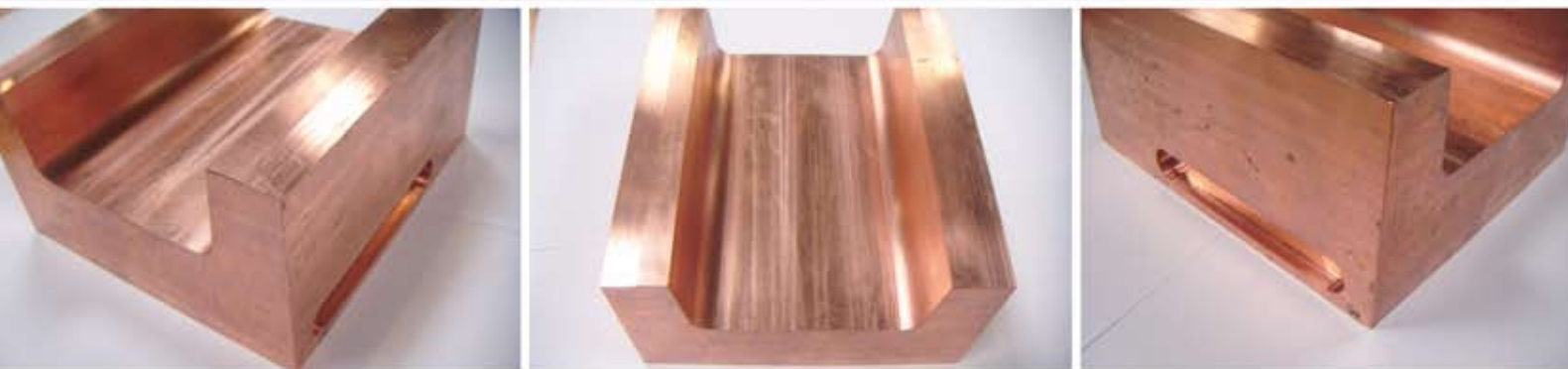
Applications

Aluminium and copper casting lines.

The majority of the world's continuous cast copper rod is manufactured by wheel-belt or twin-belt bar casters.

This includes the processes of SCR, Properzi, Essex, and Contirod. The casting machines use steel bands and copper alloy components including **CASTING WHEELS** and **DAM BLOCKS** to form a continuous copper cast bar from molten copper.

In the process of producing the copper cast bars, acetylene soot, graphite and oil coating are applied to the **CASTING WHEELS** and **DAM BLOCKS** as protective thermal barriers.



Casting wheels and dam blocks production

LBI has developed **CRM16E**, this alloy has been designed to achieve a high level of service life for casting wheels. The material exhibits high levels of hardness, tensile strength, thermal conductivity along with an exceptionally high resistance to softening.

Manufacturing process:



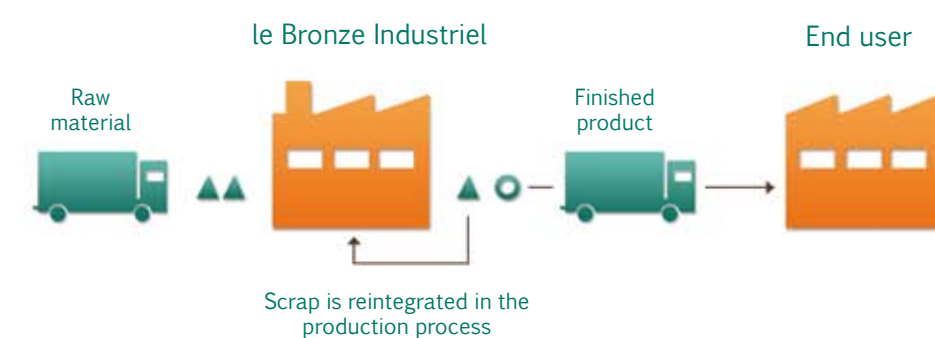
Manufacturing range:

Today, we manufacture casting wheels ranging from 600 mm to 3000 mm diameter, larger diameters can be accommodated if necessary.

From casting to machining

One of Le Bronze Industriel major strengths relies in its fully integrated production process, from casting thru to machining. This uniqueness guarantees complete traceability and thus a perfect control of quality.

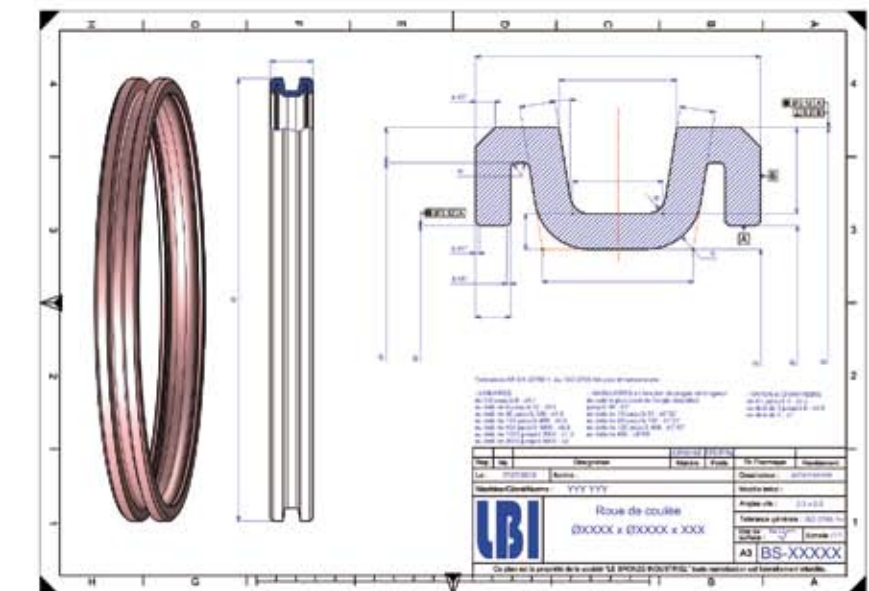
Le Bronze Industriel offers you a faster and easier ordering process (logistic, lead time, administrative and costs):



Customer's benefit

- ✓ Our long experience of supplying copper alloys in various markets and it's applications
- ✓ Close collaboration with worldwide producers that have optimized the production of forged casting wheels for various continuous casting systems
- ✓ More than 50 plants in the world uses our Copper Casting wheels making Le Bronze one of the leader on this market.
- ✓ Development of a special copper alloy (CRM16E) exclusively dedicated to the fabrication of casting wheels
- ✓ High yield strength, excellent fatigue resistance and long service life are guaranteed terms in regards to our Casting Wheels in Copper Chrome Zirconium grades
- ✓ Benefit by recycling your used components thus reducing both our carbon footprints

- ✓ We support our customers thanks to our specialized engineering department and qualified TOP SOLID technicians



Our approvals



Our quality control system complies with the criteria established by:
ISO 9001 : 2008 (AFAQ)

Our references

Aluminium Pechiney Groupe Alcan
Ascometal
Befesa Aluminio Bilbao Sociedad
Cheongwoo Tech Co. Ltd

Encore Wire Ltd
Gaong Cable Co. Ltd
Hascelik ve Halat San Tic AS
Hydro Aluminium AS

Ilijn Electric
IUSA S.A
K.T.C
Kazkat Plant

KBM Master Alloys B.V
Kyshtym Electrolytic Copper Plant
La Farga Lacambra
Lamifil N.V

MB Shiroyama Co
Nexans Vietnam Power Cable Co
Oznur Kablo
Plasincó Ltda

Poonghan Metal industries
Sarkuysan
Taihan Electric wire Co Ltd
Thai Metal Processing Co Ltd

Walsin Lihwa