

PRODUCT
CATALOG
Strips & Sheets

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Uba
lebronze alloys



About Lebronze alloys

Lebronze alloys is a world leader in the **development** and **fully integrated production** of **high-performance copper and nickel alloys**.

Thanks to a multidisciplinary know-how, the Group provides **innovative solutions to all major industries** such as Aeronautics, Electronics, Space, Automotive, Energy, among others.

Our 6 production facilities and 750 employees manage a **unique range of metal processing technologies**: continuous and semi-continuous casting, extrusion, hot and cold rolling, drawing, open-die forging, hot stamping, closed-die forging, cold forming, machining, non-destructive testing, etc.

The Group's commitment is to find appropriate and **optimized solutions for every sector's requirements while optimizing the environmental impact of our products**.

High performance copper and nickel alloys

Fully integrated production process

Optimized environmental impact of our products

KEY FIGURES

- 6 production sites
- 3 service centers
- 750 employees
- 200 + alloys produced
- 288 M€ turnover

History of the Group

2006

The DUMONT family, some private investors as well as some key managers, take over "Le Bronze Industriel", a company founded in France in 1934 specializing in copper alloys production. This change of ownerships, with Michel DUMONT as active Chairman, marked a new period of strategic growth for the company.

2012-2016

Period of massive external growth for the company. Several major acquisitions are made such as Inoforges, Swissmetal Lüdenscheid and CLAL. These acquisitions consolidated our metallurgical expertise through a sharing of experience.

2016

Le Bronze Industriel officially becomes Lebronze alloys. It has been 10 years since the buyout and the Group has now tripled its sales.

2020

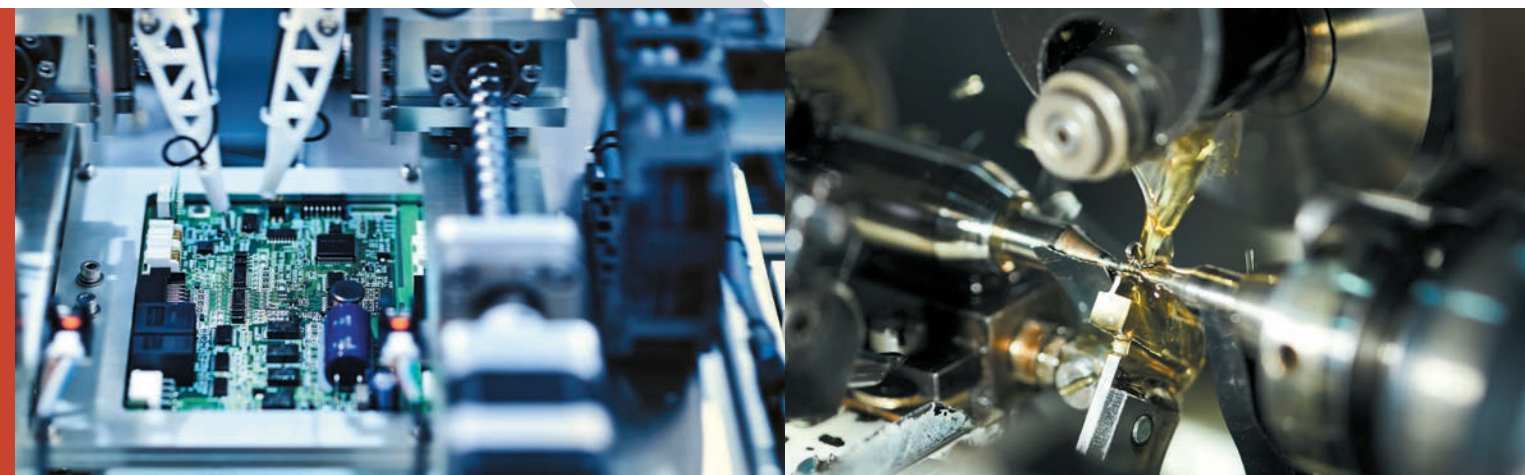
Opening of our first service center in Europe at Aldridge (UK). This service center joins an already well-established network of distributor partners around the globe and enables us to provide a greater responsiveness to our customers' needs.

2022

Marks the end of a 2-years industrial repositioning allowing the Group to focus on high added value materials.

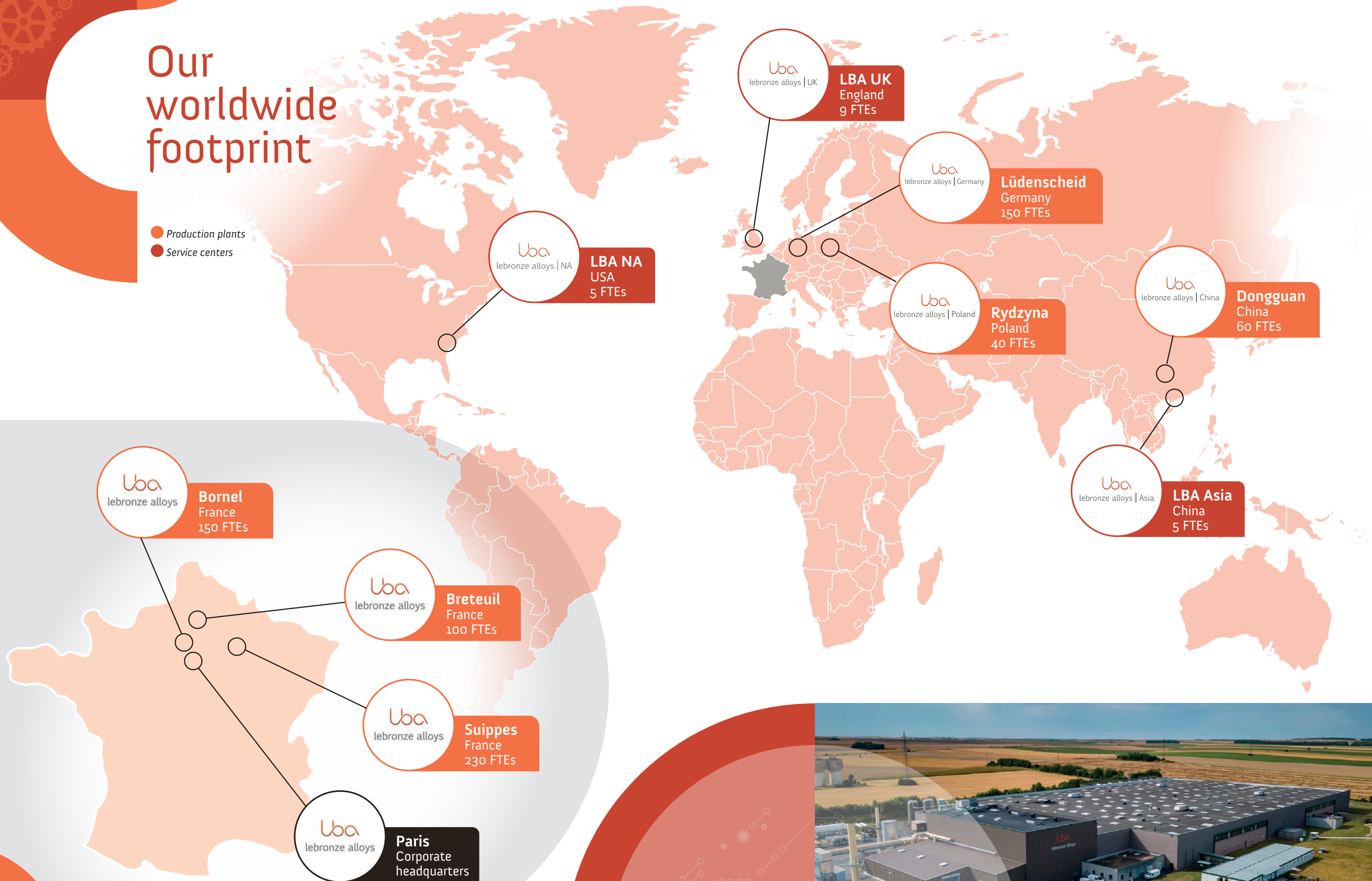
2023

The Group counts over 750 employees, 6 production sites and 3 service centers around the world and generates 288 M€ of sales.



Our worldwide footprint

- Production plants
- Service centers



Product range at a glance

Lebronze alloys offers **more than 200 copper-based and nickel-based alloys** with unique properties which meet the most complex requirements. We supply these alloys in different forms :



Billets



Bars



Hollow bars



Strips



Sheets



Rods



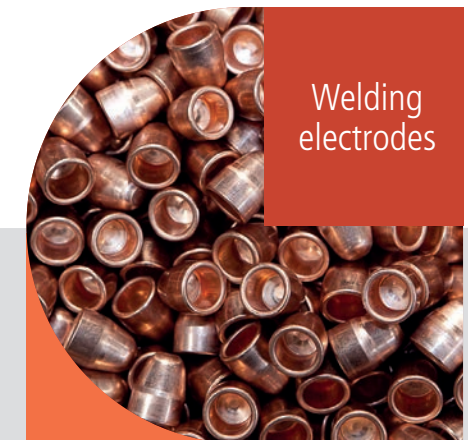
Wires



Standard
& complex
profiles



Plates



Welding
electrodes



Marine
tubes
& fitting



Machined
blanks
and parts

A fully integrated production process

One of the Group's major strengths relies in its **fully integrated production process**, from smelting to machining and recycling.

This particularity guarantees a traceability, optimization and strict control of the final properties of our materials so they can suit to the most stringent requirements.

Melting & Casting

- Continuous wire casting
- Continuous bar casting
- Semi-continuous casting

Hot forming

- Extrusion
- Hot rolling
- Free forging
- Hot stamping

Cold forming

- Cold rolling
- Drawing straightening
- Cold stamping
- Heat treatments

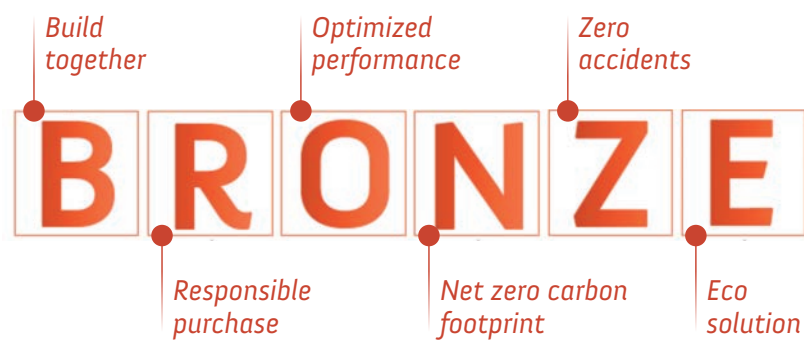
Finishing

- Machining
- Servicing
- Scrap recovery

Our sustainable development policy

To ensure the sustainability of our business, it is essential to strike the **right balance between economic performance, social impact and environmental impact.**

This balance within the Group is structured around our **6 "Bronze" pillars.** Each pillar is broken down into actions and indicators that enable us to be part of a dynamic of continuous progress and sustainability.



Build together: this pillar covers social initiatives that have a positive impact on gender, sex and age equality, as well as projects that improve the well-being of our teams at work.

Responsible purchase: purchases represent more than 50% of Group sales. It is therefore essential that we implement a responsible purchasing policy and tighten up our requirements of our suppliers.

Optimised performance: the Company's economic, industrial and environmental performance is a key factor in meeting the expectations of our relevant stakeholders.

Net zero carbon footprint: taking into account the major challenge of decarbonation, we have decided to make this a specific pillar and to build a path that meets the transformation of the Climate Act and the Paris Agreement.

Zero accidents: our processes require constant vigilance. We are taking action to anticipate and reduce the risk of accidents as far as possible.

Eco solution: by working in collaboration with our customers and bringing innovations to the market, we are contributing to a more sustainable approach by improving the life cycle of products.

Quality

Lebronze alloys develops for all its activities a formally recognized quality management system which allow to:

- guarantee the traceability of our products, from raw material to the product delivered
- certify our products properties
- control our delivery times

Our state-of-the-art quality checks equipment include:

- **Metallurgical tests** such as traction, resilience, hardness, bending and others
- **Non destructive tests** such as Magnetic Particle Inspection (MPI), ultrasonic contact testing, liquid penetrant Inspection and others
- **Metrology, geometry and surface tests** such as surface metrology, global DEA, profile projectors and others



Our certifications

All our certificates can be consulted on our website

Aerospace certifications



Certified site: Suippes



Heat treating



Certified service center:
Lebronze alloys UK

General certifications



Certified sites: Bornel, Breteuil, Lüdenscheld, Suippes, Rydzyna.



Certified sites: Breteuil, Suippes, Rydzyna.



Certified sites: Lüdenscheld and Suippes.

Nickel alloys

Chemical corrosion resistance

Lebronze alloys is one of the market leaders of specialty high performance nickel alloys. Our portfolio is composed of various specific alloys known under the Niclal® brand.

For these alloys, our metallurgical process is fully integrated from foundry to final heat treatment. This allows full traceability and adapted final properties. Our nickel alloys are available in strips, sheets and wires formats. For other chemistries, please contact our teams.

PRODUCT PORTFOLIO		
Alloy	ISO	ASTM
Niclal® 400	NiCu ₃₂ Fe ₂ Mn	N04400
Niclal® 400 BC*	CuNi ₆₄	N04400
Niclal® 4QQN*	CuNi ₆₄	N04400
Other chemistries on demand		

*For those alloys, technical data is on demand

STANDARD CAPABILITY			
Format	Thickness	Width	Length
Strips	0.08 - 3.5 mm	3 - 380 mm	NA
Sheets	0.25 - 3.5 mm	20 - 380 mm*	500 - 3000 mm*

*Dimensions outside this range on request



ESG Performance

We aim to offer our Customers products with the leading grade of environmental footprint. To achieve this, we make major investments in innovative processes aiming to optimize energy and water consumption and increasing the use of recycled raw materials. More specifically, we have developed state-of-the-art recycling know-how based on specialized purchasers for sourcing end of life materials to be processed in our Group Upcycling Workshop. Another key aspect of our ESG strategy is to offer substitutes for alloys that are not REACH and RoHS compliant.

- Our nickel alloys are :
- RoHS and REACH compliant
 - Mainly produced from recycled raw materials



Markets and applications

Energy



- Heat exchangers

Others

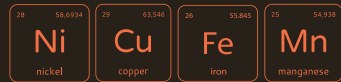


- Sprinkler parts
- Fasteners
- Chlorine valves
- Mechanical components



Niclal® 400

NiCu₃₂Fe₂Mn



Niclal® 400 is a nickel alloy demonstrating excellent resistance to seawater and chloralkali corrosion. Its properties make it an ideal material for sprinkler and mechanical components in highly corrosive environments.



MATERIAL DESIGNATION

ISO	ASTM	Others
NiCu ₃₂ Fe ₂ Mn	N04400	DIN 17743 Wr N°2.4360

CHEMICAL COMPOSITION

Ni	Cu	Fe
Balance	32%	2%

PHYSICAL PROPERTIES

General properties	
Density at 20 °C	8.8 g/cm³
Thermal conductivity	22 W/m.°C
Coefficient of thermal expansion from 20 to 300 °C	13.9 x 10 ⁻⁶ /°C
Modulus of elasticity	179 GPa
Electrical properties	
Electrical conductivity at 20°C	7.5 % IACS
Electrical resisitivity at 20°C	54.7 µΩ.cm

STANDARD CAPABILITY

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OTHER AVAILABLE FORMS

Wire
Rods

TYPICAL APPLICATIONS

Sprinkler
Fastener
Chlorine valves
Oil and Gas gaskets
Heat exchangers
Mechanical components

COMPATIBLE DOWNSTREAM PROCESS

Cold working
Deep drawing
Welding

KEY FEATURES

Excellent resistance to seawater and chloralkali corrosion
High mechanical properties

STRIPS MECHANICAL PROPERTIES

Temper	Thickness (mm)	Yield Strength 0.2% (MPa)	Tensile Strength (MPa)	Elongation (%)	Hardness (HV)
Annealed	< 2	< 200	< 580	> 35	< 140
	2 - 3.5	> 180	< 540	> 35	< 140
¼ hard H11	All thickness	> 300	550 - 610	> 25	160 - 200
½ hard H12	All thickness	> 500	600 - 660	> 12	180 - 230
¾ hard H13	All thickness	> 560	650 - 720	> 7	200 - 250
¾ hard H14	All thickness	> 650	700 - 820	> 2	220 - 270
Spring H15	All thickness	> 700	> 800	~ 1	> 250

SHEETS MECHANICAL PROPERTIES ACCORDING TO ASTM B127

Temper	Yield Strength 0.2% (MPa)	Tensile Strength (MPa)	Elongation (%)
Annealed	> 195	485 - 585	> 35
¾ hard H14	> 620	> 690	> 2



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Métallurgie d'exception

www.lebronze-alloys.com