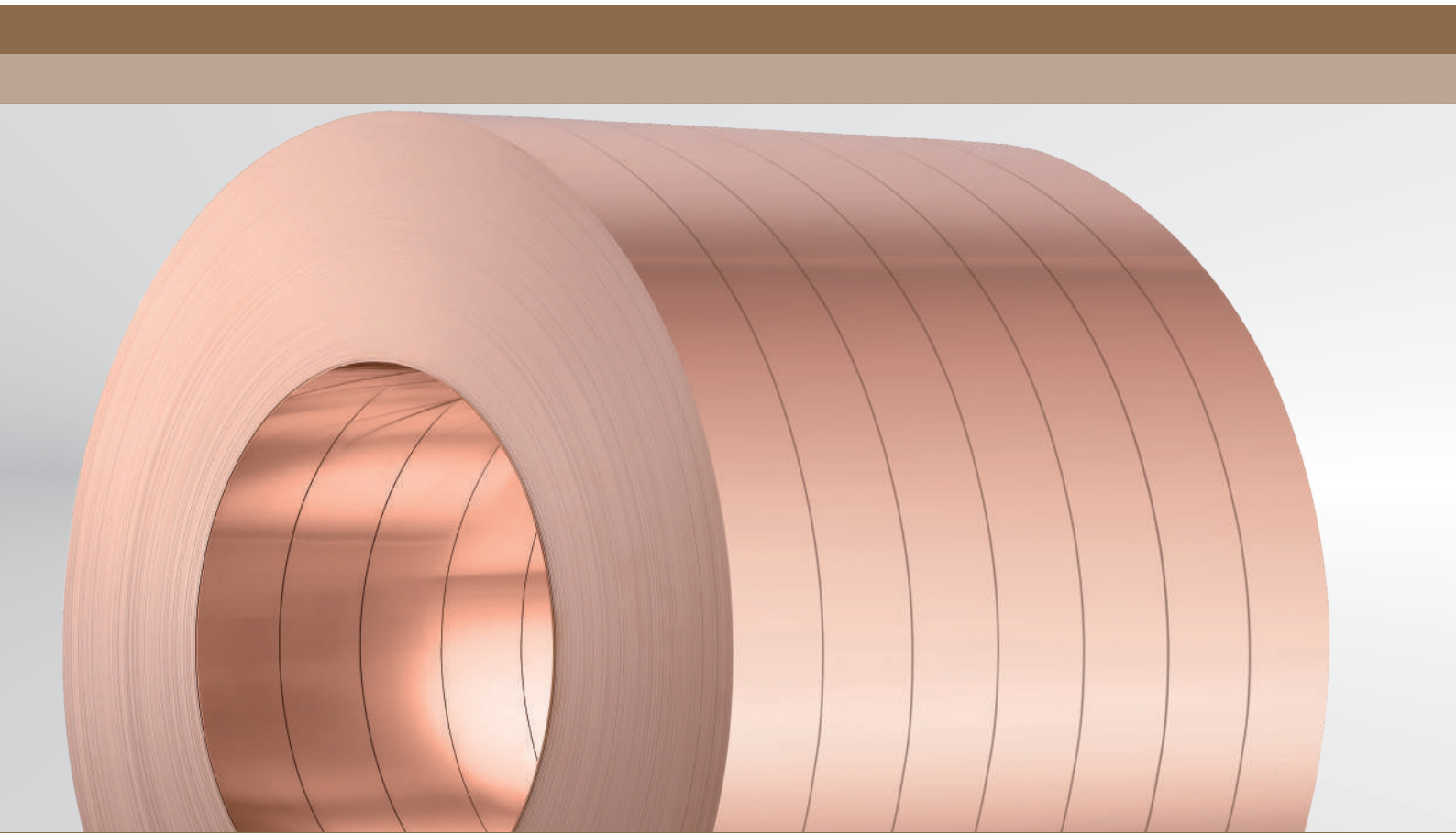


boway

COMPANY PRESENTATION



www.boway.de



About boway

Our Company

Ningbo Boway Alloy Material CO., LTD. (hereinafter referred to as Boway) was founded in 1993 and listed on the main board of Shanghai Stock Exchange (stock code: 601137) in January 2011. After nearly 30 years of rapid and healthy development, it has built nine manufacturing bases and a capital cooperation platform in the world. Boway has become a scientific and international company integrating new materials, new energy and other industries.

Boway is in the first batch of "innovative enterprises" and "national technology innovation demonstration enterprises" of the State, possessing R&D innovation platforms such as "National Enterprise Technology Center", "National Postdoctoral Scientific Research Station", "CNAS Accredited Lab" and "National Joint Engineering Research Center"; it is also a "high-new technical enterprise" of the state and Technical Committee Member of International Wrought Copper Council (IWCC).

Through digital transformation, Boway has promoted digital R&D, digital manufacturing, digital marketing, digital supply chain, digital service and digital management to establish a self-evolving digital enterprise with continuous innovation ability.

Boway conduct market research and product R&D by standing in the forefront of science and technology, aiming at "scientific and technological innovation, leading the industry". In recent years, Boway has completed more than 50 new material innovation projects, possessing 185 patents; it has led or participated in the formulation of more than 17 national standards and 5 industry standards, creating value for customers, leading the development of the industry, and promoting the progress of times.

Global Manufacturing Base

Boway has 9 manufacturing bases over the world, including Boway Yunlong, Boway Binhai, Heuchelheim Germany, Herborn Germany, Ontario Canada, and Bac Giang Vietnam, etc., to provide high-quality products, as well as personalized and localized services in response to different needs of customers around the world.

Our Management

Adhering to the German spirit, German technology, German standards and German management, with consideration on the actual situation of the enterprise, Boway applies the systematic, rigorous and digital management system to R&D, production, marketing, human resources, finance, operation and other aspects, building a perfect management system. At the same time, it keeps on improving the management level through continuous innovation, promoting rapid and healthy development of the company!

Our Future

Boway Alloy is committed to leading the industry development and promoting the progress of times. With the goal of "scientific and technological innovation, leading the future", it develops new products to promote scientific and technological progress of the society, provides professional application solutions to help customers succeed, and provides high quality products to continuously add value for global customers.





Technological innovation

R&D INNOVATION

Boway Alloy possesses innovative R&D platforms such as "National Enterprise Technology Center", "National Postdoctoral Scientific Research Station", "CNAS Accredited Lab" and "National Local Joint Engineering Research Center"; experts of metallographic technology, simulation, digital twin, surface treatment and manufacturing from Germany, Japan, Italy and US, as well as intermediate and advanced scientific research and manufacturing team including post-doctors, doctors, masters and so on; it has developed high quality new materials and new energy products with its world leading high-precision, high-efficiency modern professional production equipment and testing equipment to help customers succeed and create value for customers continuously. By virtue of its world-leading high-precision, high-efficiency modern professional production equipment and testing equipment, it has developed high-quality new materials and new energy products to help customers succeed and create value for customers continuously.



OUR MANAGEMENT

With reference to the management style of German enterprise, the Company implements systematic and comprehensive management system in strategy design, finance, human resources, R&D, production and marketing and other areas.

- In 1997, brought in ISO9002:1994
- In 2004, perfected the corporate culture management system
- In 2007, built the customer service center to improve the ability of service
- In 2008, brought in SAP information management system to implement informatized management
- In 2010, promoted lean manufacturing
- In 2013, brought in IBM strategic management
- In 2014, run People Soft E-HR, the global leading human resource management system, and passed OHSAS18001:2007, the Occupational Safety and Health System Certification
- In 2017, passed ISO14001:2015, the environmental management system certification; ISO9001:2015, the quality management system certification
- In 2018, MES system applied
- In 2019, PLM applied, and CRM to optimize customer operation and maintenance management
- In 2020, the first year of digital transformation, we will build self-evolving digital R&D, digital manufacturing, digital marketing, digital supply chain, digital service and digital management with continuous innovation ability to forge a digital enterprise.





Research & Development

R&D OF PRODUCTS

boway alloy as a "National Certified Enterprise Technology Center", "National Post-doctoral Research Station", "National Accredited Laboratories", "The first batch of national innovative enterprise", covers 7240 square meters, currently has 228 technical staffs, including 15 domestic and international senior experts, 6 doctors, the research of environmental protection, energy saving, high-performance alloys, Non ferrous alloy material and new technology research, Become one of the China's non-ferrous metal industry the most powerful research and development organization.

R&D Center imported the world-class testing equipment and prototype equipment from Germany, the United States , Japan and Italy, created a good research environment for the R&D activities.

As the only commissioner from China's bar rod alloy enterprise of technical committee of International Wrought Copper Council, Boway Alloy is the main formulation organization of national and industrial standard of China's alloy bar and wire. It has undertaken to work out 19 national standard and 4 industry standard of copper alloy bar and wire in China, leading the speedy development of alloy materials industry in China.



TESTING EQUIPMENTS

boway is equipped with perfect testing machines to ensure the reliability of Q/C. Main testing machines include:

- ◆◆ SEM
- ◆◆ OXFORD EDS & EBSD
- ◆◆ Contact-type thermometer
- ◆◆ Oxygen / Nitrogen / Hydrogen Determinator (Germany)
- ◆◆ U.S. EDX "X" ray energy dispersive spectroscopy
- ◆◆ Carbon/Sulfur Determinator (Germany)
- ◆◆ Optical Emission Spectrometry (Germany)
- ◆◆ Leica Stereo Microscope (Germany)
- ◆◆ Leica microscope (Germany)
- ◆◆ Flash Diffusivity Instrument (Germany)
- ◆◆ Micro Hardness Testers (Japan)
- ◆◆ Static and dynamic testing machine servo
- ◆◆ Computerized Electronic Universal Testing Machine
- ◆◆ DTA
- ◆◆ X-ray Thickness Gauge
- ◆◆ Keyence Laser Confocal Microscope (Japan)
- ◆◆ Keyence 3D microscope (Japan)



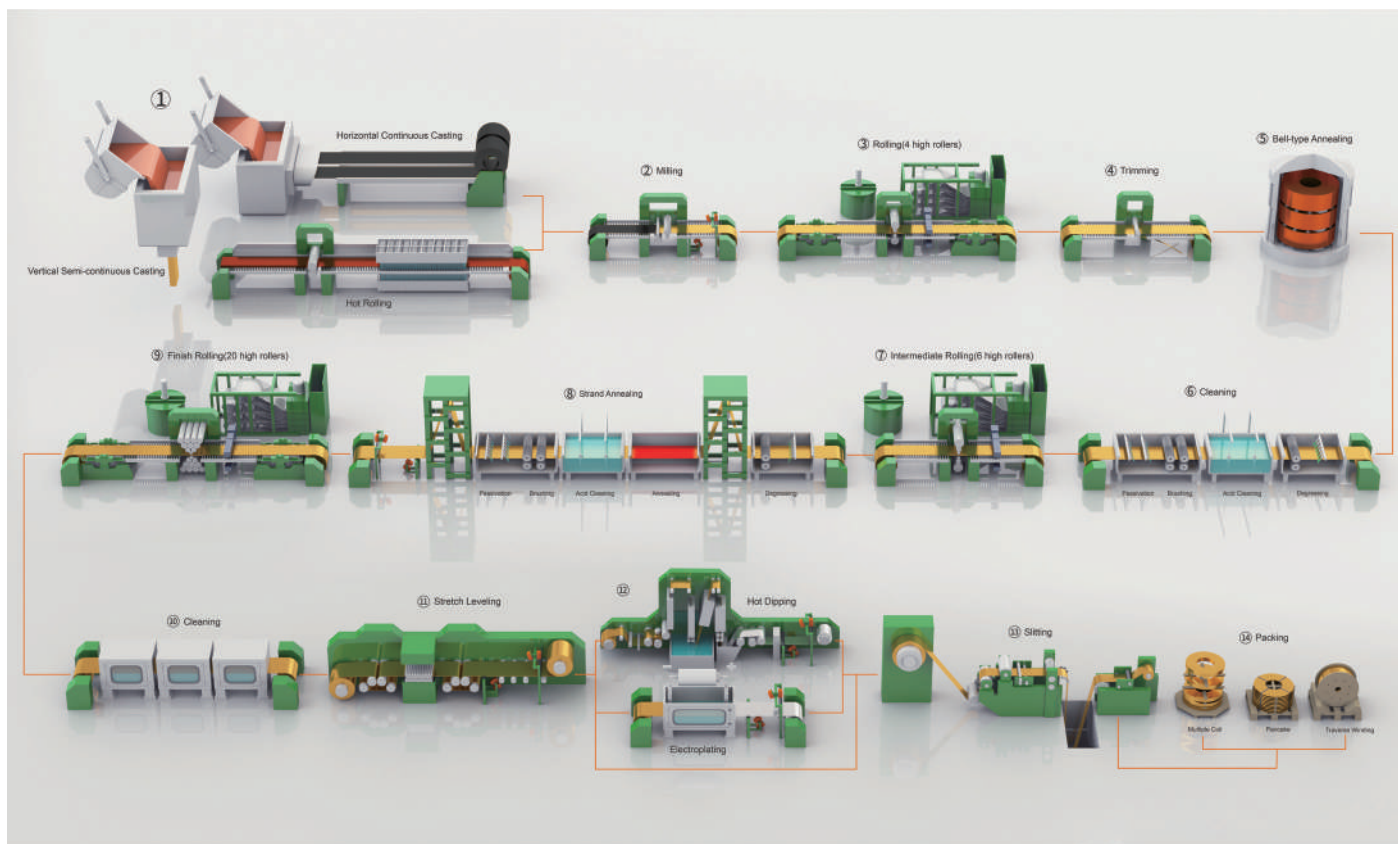


Strip Production

PRODUCTION EQUIPMENT

Imported from Germany, Switzerland, Austria, Japan and other countries, Boway Alloy now owns high precision, high efficiency professional production equipments including:

Various series of horizontal continuous casting machines, surface milling stand, walking beam furnaces, bell-type annealing furnace, strip floatation furnace, heat-treated furnace, Tension annealing furnace, Stress relief annealing furnace; Thickness automatic controlled four high mill, six high mill, twelve high finishing mill, B+S tension leveling line, longitudinal slitting machine, high precision milling machine and other world-class production equipments. With the help of its experienced technical team and workers, Boway has a leading production line among worldwide copper manufacturers.

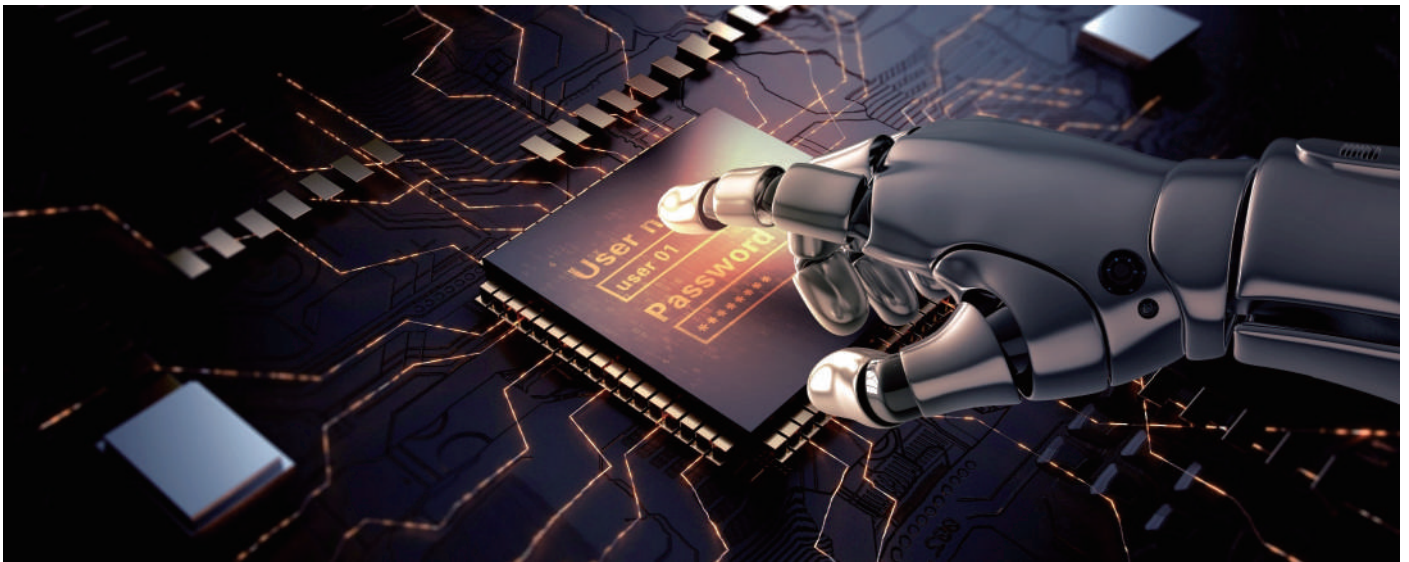


This process graph is not standard flow and may differ per alloy/temper. Some processes will repeat several times to finish specific rolled product.

Markets & Applications

Industry customer application

Boway is committed to the development, production and sales of high performance and high precision non-ferrous alloy strip; The innovative functional alloy materials, environmental protection alloy materials, energy saving alloy materials and alternative alloy materials are applied to intelligent vehicles, consumer electronics, 5G communications, semiconductors, electrical appliances and other industries, continuously creating value for global customers and providing high-quality industrial grain for modern industry.



Technological innovation



Our Products

We supply outstanding copper alloys in strip form including tailor made plated solutions. These are manufactured to the highest precision and tightest tolerances in the market.

Our customer application know-how guarantees solid and sustainable products and provide as such the added value our customers and partners are seeking for. Our product program offers the unique one-stop solution in Copper based solid solution alloys as well high-performance strip materials and plated products.

Aside standard bare surfaces we create unique high-end bare surfaces for the semiconductor industry or for the connector industry hot dip tin or reflow tin electroplated surfaces.

Our Quality

boway is a high-quality copper alloy manufacturer used worldwide in leading Automotive, Semiconductor, Electronics and CCC products.

We produce on customer specific specifications or on international standards. Our QA system is certified acc. to IATF 16949. We apply the most modern QA techniques and tools.

Our Production

State of the art manufacturing capabilities by German and other European top-notch equipment manufacturers in combination with our know-how lay a solid basis for our outstanding and innovative products. In combination with our experienced R&D and highly skilled processing and manufacturing team we create the unique and exceptional boway quality, which is internationally renowned.

Our Innovation

boway has invested strongly into high-end testing capabilities and into industry leading R&D capacity laying the foundation of creative and value-added innovations for our customers and partners.

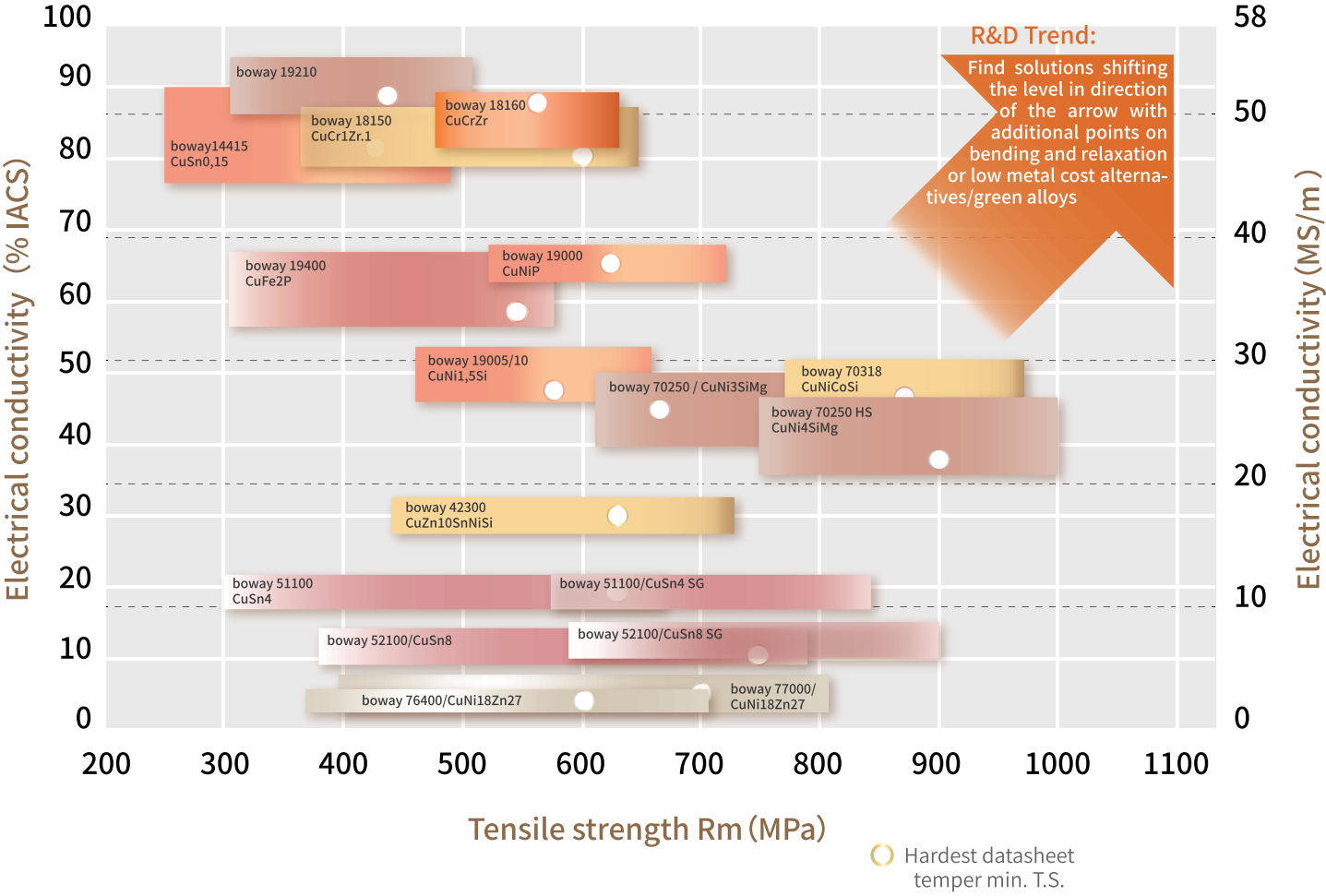
With customer focus, thinking out of the box mentality, hard-working culture and a sustainable, ethical way of doing business we are at the pulse of our industry and the supply chain up to the OEM.

Alloy Solutions

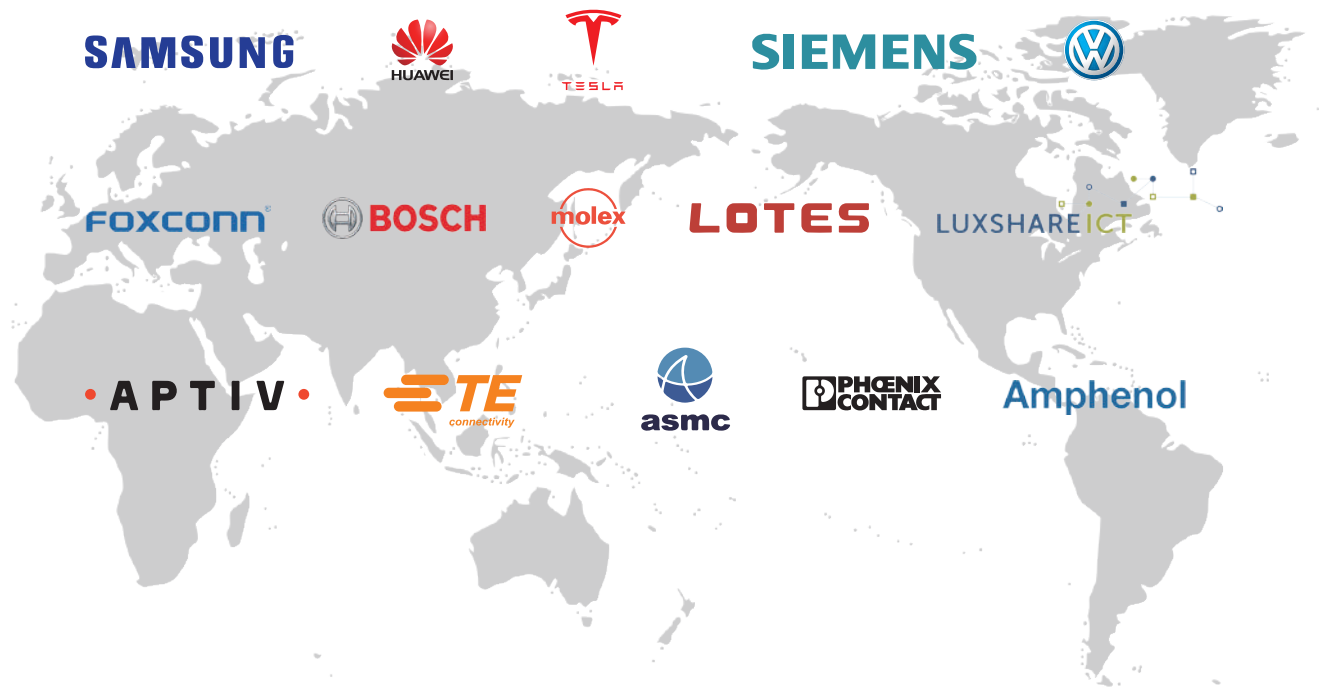
Alloy System	Boway designation	Former designation	UNS	EN	JIS	GB
CuCr/Zr	boway18150	C18150	C18150	CuCr1Zr	—	TCr1-0.15
	boway18160	C18160	C18160	CuCrZr	—	—
CuNiP	boway19000	PW49700	C19000	CuNi1P	—	—
CuFe	boway19210	C19210	C19210	CuFe0.1P	C1921	TFe0.1
	boway19400	C19400	C19400	CuFe2P	C1940	TFe2.5
CuNiSi	boway19005	C19005	C19005	—	—	—
	boway19010	C19010	C19010	CuNiSi	—	—
	boway70260	C70260	C70260	CuNi2Si	C7026	QSi0.6-2.1
	boway70250	C7025	C70250	CuNi3SiMg	C7025	QSi1-3
	boway70250HS	C7025	C70250	CuNi4SiMg	C7025	QSi1-3
CuNiCoSi	boway70318	PW47100	C70318	CuNi3CoSi	—	—
CuZnSnNiSi	boway42300	PW33520	C42300	CuZn10Sn1NiSi	—	—
Bronze CuSn /	boway14415	C14415	C14415	CuSn0.15	—	—
	boway51000	C51000	C51000	CuSn5	C5102	QSn5-0.2
	boway51100	C51100	C51100	CuSn4	C5111	QSn4-0.3
	boway51900	C5191	C51900	CuSn6	C5191	QSn6.5-0.1
	boway52100	C5210	C52100	CuSn8	C5210	QSn8-0.3
	boway52400	C5240	C52400	CuSn10	C5241	—
	boway 51100 SG	C51100	C51100	CuSn4	C5111	QSn4-0.3
	boway 51900 SG	C51900	C51900	CuSn6	C5191	QSn6.5-0.1
	boway 52100 SG	C52100	C52100	CuSn8	C5210	QSn8-0.3
CuNiZn	boway77000	C7701	C77000	CuNi18Zn27	C7701	BZn18-26
	boway75200	C7521	C75200	CuNi18Zn18	C7521	BZn18-18
	boway 76400	C76400	C76400	CuNi18Zn20	—	BZn18-20

Alloy Solutions

Alloy Strip Map



Boway's world



OUR CUSTOMERS

Through unremitting efforts over many years, Boway Alloy has now exported new materials and new energy products to numerous countries and regions including but not limited to America, Brazil, Germany, Italy, Holland, Australia, India, Thailand, Malaysia, Indonesia, Vietnam, Singapore, Pakistan, South Korea, Japan, South Africa and Egypt. From our location in China, our international market pattern now covers Asia, Europe, North America, and beyond.

With high-quality products and outstanding service, Boway Alloy has gained the recognition of a wide swath of world top 500 companies - TE, TI, Infineon, FOXCONN, Molex, Continental Automotive, VW, Bosch, SIEMENS, Samsung, Huawei and CalCom Solar among others. Our high-performance alloy products have been applied in the Shenzhou Spacecraft Series 1 through 10, Chang'e Detectors 1 and 2, and the Tiangong-1 aircraft - marking a significant contribution to China's aerospace industry.

By virtue of remarkable innovation and advanced technology, Boway Alloy continuously serves the global manufacturing industry by providing a variety of first-class alloy materials and solar energy products to global clients. By meeting ever-changing client and end-user demands while promoting societal progress, Boway Alloy has successfully developed itself as a trustworthy global vendor.

SERVICE PHILOSOPHY

Boway Alloy has firstly set up an effective and specialized service center in non-ferrous alloy industry according to international business philosophy. Adhere to the customer as the center and a full range of integrated services to meet all customer needs, enhance customer service quality.

Service indefinitely, Boway Alloy intends to pursue satisfaction of customer.

GLOBAL SALES NETWORK:

USA, Brazil, France, Germany, Italy, Netherlands, Australia, India, Thailand, Malaysia, Indonesia, Vietnam, Singapore, Pakistan, China, South Korea, Japan, South Africa, Egypt etc.



Boway's world

Values

Based on moral, innovation is the soul, good results for the honor.

Business Ideal

Constantly create value for customers

Enterprise Spirit

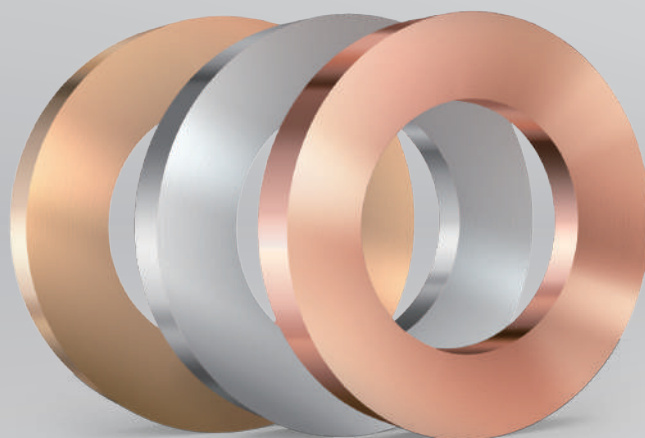
Sincere cooperation, be creative, challenges of the future.

Enterprise Policy

Market-oriented, quality assurance, manage-efficiency, innovation development, entire resources, enhance service, improve the core competitiveness of enterprises.

Working Style

Fast straight efficient.



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continuous product development.

