



Finkelstein Metals Ltd.

Bronze & Brass

Continuous cast & Extruded special copper-alloys

THE COMPANY

THE BRONZE AND BRASS SPECIALISTS



FINKELSTEIN

MISSION STATEMENT

50 years of expert activity in the manufacturing of Non-Ferrous Metal Castings and Extrusions have resulted in Finkelstein Metals Ltd gaining a high reputation in the Non-Ferrous Metal business. The modern technology used in its manufacturing processes, its constantly growing range of products, commitment to precision, quality, accurate delivery times and long-term service to its ranks of satisfied and loyal customers in many parts of the globe attest to this reputation. New customers who constantly join the team of Finkelstein Metals' users will vouch for its well-earned name.

GROWTH

From a small family metal casting workshop until becoming Israel's leading specialist in Continuous Casting and Extruded Bronze and Copper Alloys Finkelstein Metals and its new subsidiary Maof also offer a wide range of high quality extruded Brass products.

Constantly employing state-of-the-art technology and equipment Finkelstein Metals meets the industry's growing needs. Specialist and tailor-made alloys add to its ability to be a market leader in Non-Ferrous Metals supply.

PRODUCTION FACILITIES

It is our aim to maintain highest international standards and to keep up with product and marketing trends. In order to do this we employ the most advanced equipment resulting in the most efficient and economical manufacturing processes and methods. Thus we can use modern induction melting and holding furnaces to produce the highest grade Continuous and Centrifugal Casting and Extrusion systems and provide the best quality dense alloys and finely structured grains, giving negligible porosity, the highest tolerances and the finest finish to our products.



METALS LTD.

QUALITY

Finkelstein Metals pays special attention to product quality. Our Quality Assurance systems comply with ISO-9001-2000 standards with the approval of the Israel Standards Institute. All the products manufactured in our plant are subject to strict quality control in each and every stage of production, commencing with the receipt of raw materials until the packaging of the finished product.

Our laboratory is equipped with the most up-to-date instruments, such as:

- A modern spectrometer for identifying the chemical composition of the metal and is capable, with great accuracy, to check up to 20 elements.
- A computerized system to check mechanical characteristics.
- A new ultrasonic instrument to detect internal flaws.

The following tests are carried out:

- Dezincification test
- Mercury Nitrate test
- Metalography examination

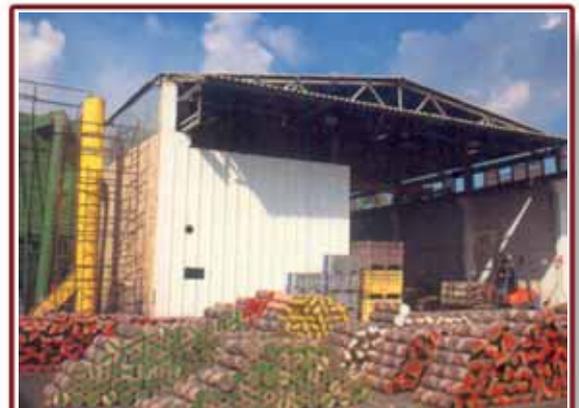
Our professional laboratory team is constantly involved in the inspection processes in the plant and has considerable industrial experience. The plant machinery, production technology and modern inspection systems enable our products to compete successfully in world markets and comply with the requirements of EN BS, DIN, ASTM, SAE, AMS and QQB standards.

Should our customers require higher mechanical composition and closer tolerances than those determined by international standards, we can do so.

Our state-of-the-art cleaning systems give the customer high quality surface finishes.

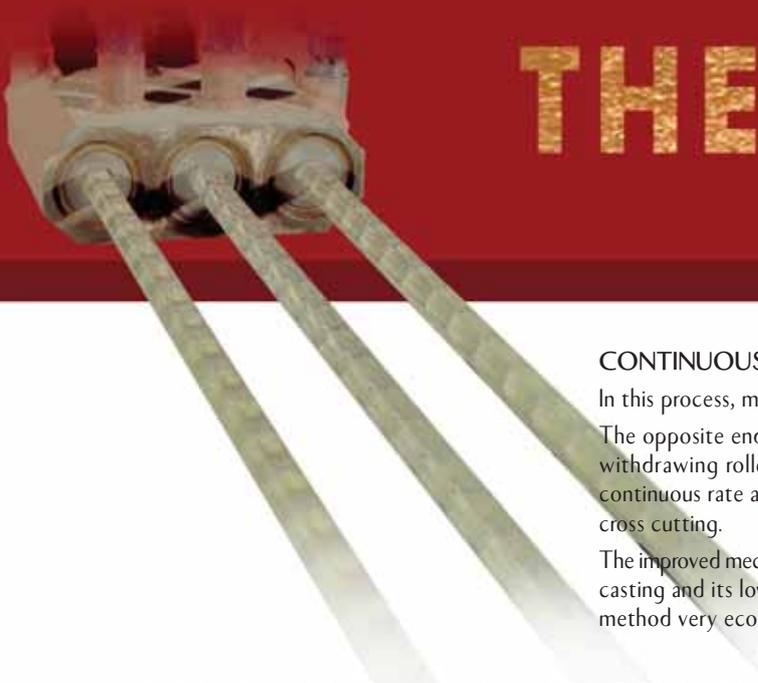
All our finished goods are packed with utmost care to prevent the penetration of dampness en route. A Certificate of Compliance (C.O.C.) is issued to the customer for every batch.

Our plant works in close cooperation with experts from the prestigious Haifa Technion, which facilitates in-depth research for future quality improvement and the development of new alloys.



Finkelstein Metals Ltd.

THE PLANT



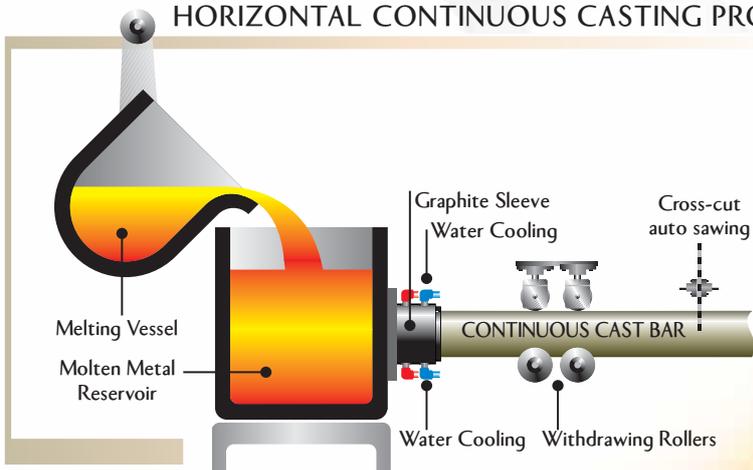
CONTINUOUS CASTING

In this process, molten metal is poured through a graphite mold. The opposite end of the mold contains a cooling apparatus. The withdrawing rollers draw the solidified rod from the mold at a continuous rate and pass it through additional cooling and finally cross cutting.

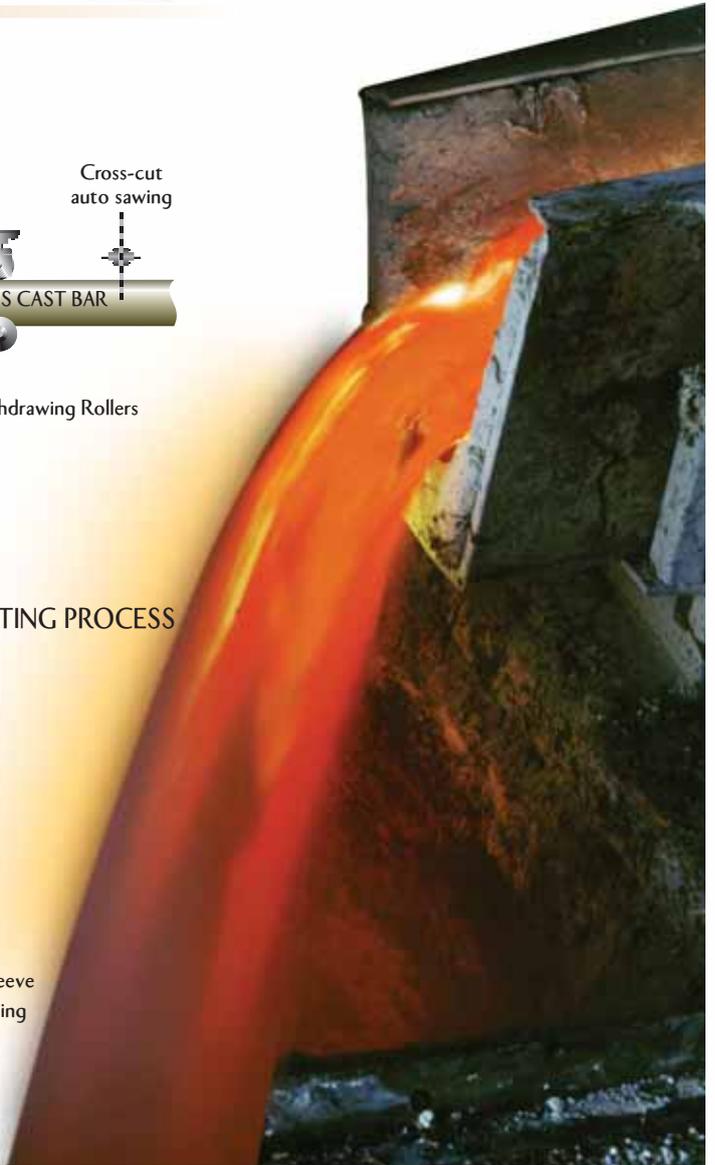
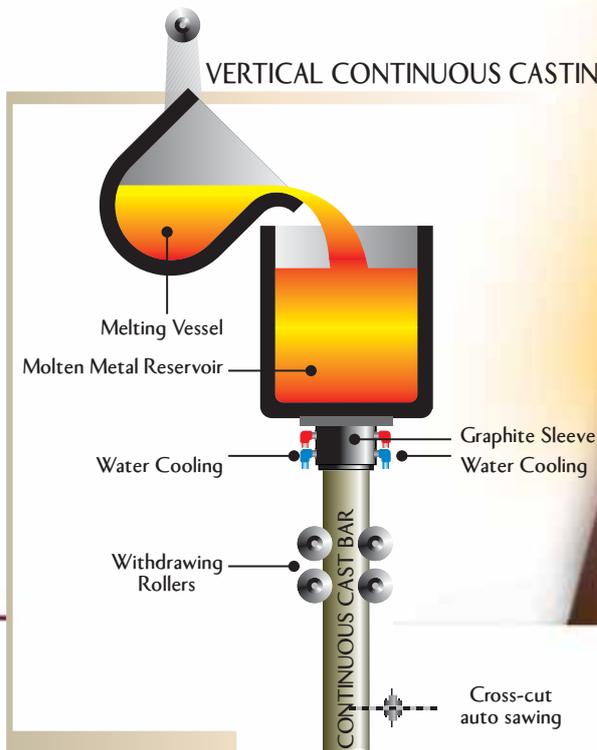
The improved mechanical properties of parts produced by continuous casting and its lower cost of operation for larger runs, make this method very economical.

PRODUCTION PROCESSES

HORIZONTAL CONTINUOUS CASTING PROCESS



VERTICAL CONTINUOUS CASTING PROCESS

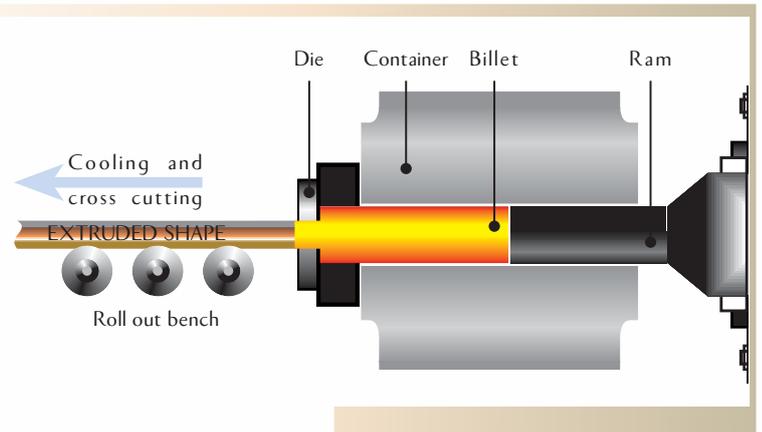




EXTRUSION

Extrusion is a process by which metal at a plastic state is forced to flow through a shape-forming die. When it emerges out of the die it inherits the shape of the die. Extrusion differs from drawing in that the metal is pushed, rather than pulled under tension.

Using extrusion, a wide range of shapes can be produced.



CONTINUOUS CASTING



SUPERIOR QUALITY COPPER ALLOYS



OUR STANDARD SIZE RANGE IS:

Round bars: 10mm - 300mm.
Hexagonal bars: 17mm - 76mm.
Square bars: 22mm - 123mm.
Rectangular bars: 12x32 - 100x300.

We are also able to quote for tailor-made sizes and shapes.

CONTINUOUS CASTING

Our continuous casting process is controlled throughout for temperature, flow, solidification, cooling and cutting, which makes the metal highly suitable for high quality alloys at no porosity and with negligible impurities.

Our bars are manufactured to an excellent polished finish and to the internationally recognized tolerances. We offer a large range of alloys (see table), shapes and sizes.

FINKELSTEIN METALS CONTINUOUS CAST ALLOYS

COMMON NAME	MATERIAL DESCRIPTION	WORLD SPECIFICATIONS				APPLICATIONS
		AMERICAN	EUROPEAN	BRITISH	GERMAN	
PHOSPHOR BRONZE	Cu94Sn5	C51000	CW452K	Pb102	CuSn6	Beater bars, clutch disks, diaphragms, sleeve bushings, springs, chemical hardware
	Cu88Pb4Sn4Zn4	C54400	CW456K		CuSn4	Bushings, gears, pinions, screw machine products, shafts, thrust washers, valve parts
	Cu89Sn11	C90700	CC481K	Pb1	CuSn12	Worm wheels and gears; bearings expected to carry heavy loads at relatively low speeds
	Cu87Sn11Ni2	C91700	CC484K	CT2	CuSn12Ni	Worm wheels and gears, bearings with heavy loads and relatively low speeds
LEADED / TIN BRONZE	Cu88Sn10Pb2	C92700	CC482K		CuSn12Pb	Bearings, bushings, pump impellers, piston rings, valve components, steam fittings, gears
	Cu85Pb9Sn5Zn1	C93500	CC494K	LB4		Small bearings and bushings, bronze backings for babbitt-lined automotive bearings
	Cu80Pb10Sn10	C93700	CC495K	LB2	CuPb10Sn	Bearings for high-speed and heavy pressure, pump, impellers, applications requiring corrosion resistance
	Cu78Pb15Sn7	C93800	CC496K	LB1	CuPb15Sn	General-service bearings for moderate pressure, bodies for use in acid mine water
	Cu75Pb20Sn5	C94100	CC497K	LB5	CuPb20Sn	Water pumps, high-speed soft metal applications, bearings for use on locomotive fenders, passenger cars
LEADED BRONZE GUN METAL	Cu88Sn10Zn2	C90500		G1	CuSn10Zn	Bearings, bushings, pump impellers, piston rings, valve components, seal rings, steam fittings, gears
	Cu85Sn5Zn5Pb5	C83600	CC491K	LG2	CuSn5ZnPb	Low-pressure valves, pipe fittings, gasoline and oil-line fittings, small gears, small pump parts
	Cu81Sn3Zn9Pb7	C84400	CC490K	LG1	CuSn2ZnPb	Low-pressure valves and fittings, general hardware fittings, plumbing supplies and fixtures
	Cu88Sn6Zn4Pb2	C92200		LG3		Oil pumps, gear, bushings, bearings, pressure-containing parts
	Cu87Sn7Zn3Pb3	C92400	CC492K	LG4		Plumb & valve parts. Pump bodies and other sea water handling components
	Cu83Sn7Zn3Pb7	C93200	CC493K		CuSn7ZnPb	Machine tools, power transmission equipment. Recommended for medium-speed tool applications
ALUMINIUM BRONZE	Cu85AL11Fe4	C95400	CC331G	AB1	CuAL10Fe	Pump impellers, bearings, gears, worms, bushings, valve seats and guides, slides, nonsparking hardware
	Cu81AL11Ni5Fe4	C95500	CC333G	AB2	CuAL10Ni	Corrosion-resistant parts, bushings, gears, worms, pickling hooks and baskets
SPECIAL BRASS	CuZn34Al2Mn3Fe1		CC764S		CuZn34Al2	High mechanical properties, middle cutting property. Statically loaded parts, valve and control parts.
	CuZn25AL5Mn4Fe3	C86200	CC762S	HTB3	CuZn25AL5	Marine technology, gears, gun mounts, bushings and bearings
	CuZn32AL2Mn2Fe1	C86700	CC763S	HTB1	CuZn35AL1	Components under high stress and normal temperatures. Brackets, moving parts, leavers

we can also produce alloys not listed on this chart. Please contact us for more information.

EXTRUSION

Continuous cast & Extruded special copper-alloys • Continuous cast & Extruded special copper-alloys • Continuous cast & Extruded special copper-alloys

THE EXTRUDED COPPER ALLOYS SPECIALISTS



OUR STANDARD SIZE RANGE IS:

- Round Bars: 4mm - 125mm
 - Hexagonal bars: 5mm - 65mm
 - Square bars: 5mm - 80mm
 - Rectangular bars: up to 102mm width
- As always we are able to quote for tailor-made sizes and shapes.

EXTRUSION

Our up-to-date extrusion processes allow us to offer our customers the highest quality profiles with superior polished finish and straightness to internationally recognized tolerances. Here, too, we offer a wide range of alloys (see table), shapes and sizes.

FINKELSTEIN METALS EXTRUSION ALLOYS

COMMON NAME	MATERIAL DESCRIPTION	WORLD SPECIFICATIONS				APPLICATIONS
		AMERICAN	EUROPEAN	BRITISH	GERMAN	
LEADED BRASS	CuZn39Pb3	C38500	CW614N	CZ121	CuZn39Pb3	Water fittings, pipe fittings, valve nuts, small metal parts and components
	CuZn40Pb2	C37700	CW617N	CZ122	CuZn40Pb2	Forging and pressing of all kinds
	CuZn36Pb3	C36000	CW603N	CZ124	CuZn36Pb3	Gears, pinions, automatic high-speed screw machine parts
	CuZn36Pb2	C35300	CW601N	CZ131	CuZn36Pb1,5	Gears, pinions, wheels, nuts, keys, bearing cages, engraver's plate
NAVAL BRASS	CuZn38Sn1	C46400	CW719R	CZ133	CuZn38Sn1	Condenser plates, welding rods, propeller shafts, valve stems, balls, nuts, bolts, rivets, fittings
	CuZn36Pb2Sn1	C48500	CW711R	CZ134		Marine hardware, screw-machine products, valve stems
D.Z.R	CuZn36Pb2As	C35330	CW602N	CZ132		Plumbers hardware, spindles, valves, taps, fittings which come into contact with potable waters
MANGANESE BRASS	CuZn36Pb2Mn2S	C67300				Pump and valve components, electrical springs and switches
	CuZn37Mn3AL2PbS	C67400	CW713R	CZ135	CuZn40AL2	Bushings, gears, connecting rods, shafts, wear plates
	CuZn39SnFe	C67500				Architectural applications, high strength components, valve stems, fittings, marine fittings, clutch disks, pump rods, shafting
	CuZn40Mn1Pb1FeSn	C67620	CW722R	CZ115		Low aluminium content makes this suitable for use when components are to be assembled by soldering or brazing. Very suitable for finish plating
	CuZn35Ni3Mn2ALPb		CW710R		CuZn35Ni2	High weathering and seawater resistance. It has good ductility and medium to high strength. Used in machine, plant and apparatus construction as well as in shipbuilding and marine technology
ALUMINIUM BRONZE	CuAL10Ni5Fe4	C63000	CW307G	CA104	CuAL10Ni5Fe4	Components subjected to impacts and varying loads in aggressive media and high temperatures, wear-resistant machine parts
	CuAL10Fe3Mn2		CW306G		CuAL10Fe3Mn2	Components of chemical and measurement apparatus, shafts and propellers. Good machinability for machine parts, tools and instruments

we can also produce alloys not listed on this chart. Please contact us for more information.

THE SERVICE

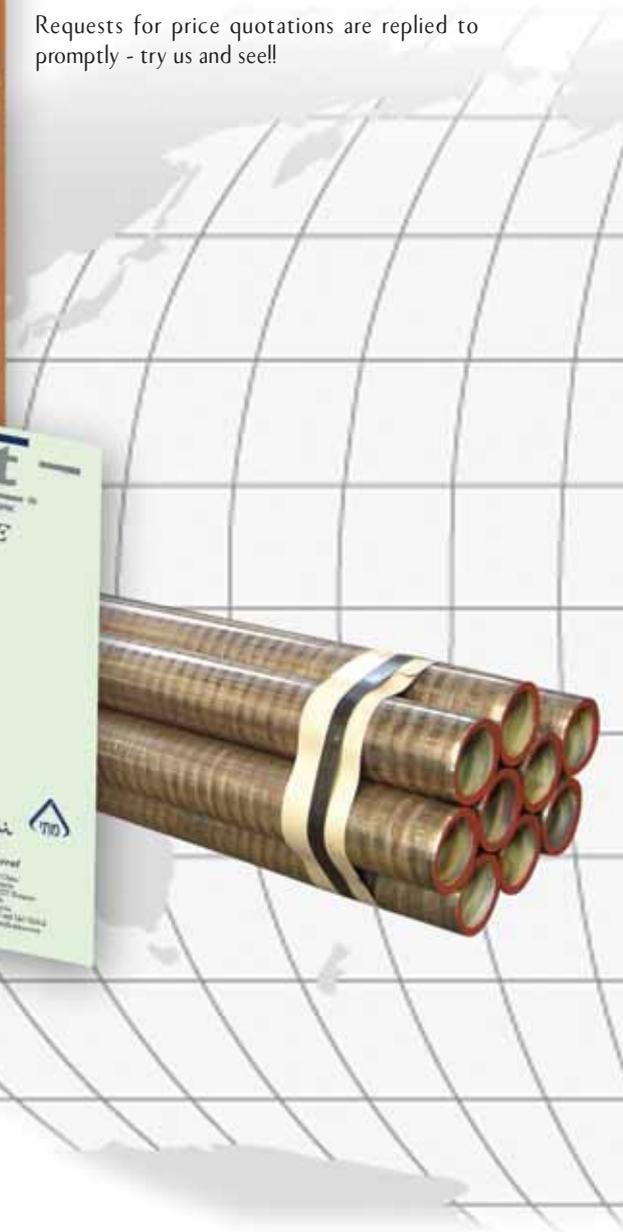
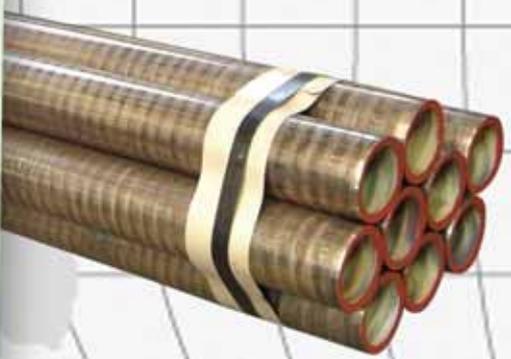


SERVICE

One of the unique features of our manufacturing processes is that we are not limited to large batch production. This enables us to supply goods at shorter notice than usual even when special materials and sizes are not in stock.

Requests for price quotations are replied to promptly - try us and see!!

QUALITY BEYOND PRODUCTION





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Beryllium Copper
Aluminium Copper
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Aluminium Copper
Aluminium Bronze

Tel: 04-9830889 Kavimip

FINKELSTEIN METALS LTD.

47 A. Shenkar St. PO Box 10308, Haifa-Bay 26110, Israel • Tel: 972-4-8410299 • Fax: 972-4-8417388
www.finkelstein-casting.com • e-mail: info@finkelstein-casting.com

MAOF NON-FERROUS METALS LTD.

21 Haiztadion St. PO Box 10031, Haifa-Bay 26110, Israel • Tel: 972-4-8722547 • Fax: 972-4-8720288
www.finkelstein-casting.com • e-mail: info@maof-metal.com