

Kormax[®]
ENABLING ENGINEERING VICTORIES

The Metals Book 2021



Contents

Engineering Materials

Metals



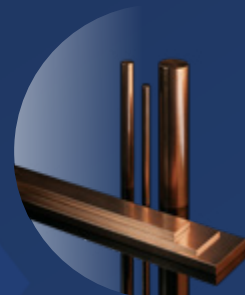
Bronze

10	LG2 Leaded Gunmetal Bronze
14	SAE660 / 932 Leaded Bronze
16	954 Aluminium Bronze
20	AB2 Nickel Aluminium Bronze
22	630 Nickel Aluminium Bronze
24	PB1 Phosphor Bronze
26	C51900 Bronze Sheet
27	729 Copper Nickel
28	Sintered Bronze



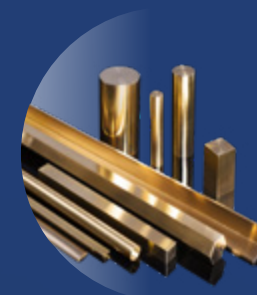
Aluminium

32	6061 Aluminium
----	----------------



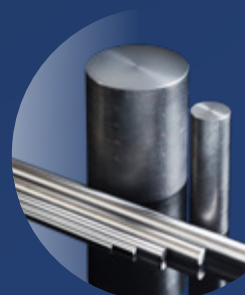
Copper

44	110 Copper
----	------------



Brass

38	385 Brass
41	260 Brass Sheet



Other Metals

48	3D Ductile Cast Iron
49	4E Cast Iron
50	Silver Steel
52	Titanium Grade 5
54	INCONEL® Alloy 718



Enabling Engineering Victories By Being Customer Centric & Creative

Becoming a leader in Materials and Plain Bearing technology doesn't happen by accident. Learn about Kormax and how we've developed to ensure you get the right product for the hardest jobs, every time.

As a fourth-generation business, we've seen industries grow and change, becoming what they are today. Throughout this time we've reshaped and adapted our business to ensure that it is always in the best position to provide customers exactly what they need. Whether it's plastics or metal, we've got your material & bushing needs sorted. Our extensive range can be custom cut to your specifications – meaning there is literally no job too big or too small.

We carry a large range of engineering materials; covering bronze, brass, copper, cast iron, aluminium, nylon, acetal, acrylic and more. All Kormax products come with batch certifications – no matter if they're cast or extruded. This way you know the material you get is up to the highest standard. If you're not sure what product is right for your job, give our friendly team a call. We're the experts, and we're always happy to help. Our established operational systems also means we can track your order – from the moment it is placed and dispatched, right up to its delivery the next day.

milson group

MILSONFOUNDRY

Kormax[®]
ENABLING ENGINEERING VICTORIES

milsons[®]



The Milson Group is made up of 3 different companies



Starting in 1947, we have over 70 years of experience



Four generations later, the Davis family still operates the group



Remaining resolutely true to our Kiwi Ingenuity roots



Today we operate in multiple sectors across the globe



Utilising our leading engineering and manufacturing capabilities



As well as our solution-orientated and innovative teams



To deliver world-class solutions on a global scale

Better by design

A seamless four-stage approach to plain bearing design & supply.

Kormax offers a fresh innovative approach to designing Plain Bearings by collaboration with global material technology leaders.

With over 70 years experience making and supplying components to equipment manufacturers we understand its the detail that makes the difference. Through our collaborative approach to engineering we help manufacturers be the best with better designed components.



01 _ Listen

The best solutions come only when the problem is comprehensively understood. At Kormax we begin with a confidential 360° review to fully understand everything. This broad analysis dives deep into the application objectives, physical factors, chemical exposure, manufacturing process, serviceability, operating maintenance, risk assessment, legal requirements, certification, competitive threats and budgetary targets.

02 _ Create

The create stage involves conceptual design then detailed design. At conceptual design our application engineers open their minds to a wide range of creative solutions. Through brainstorming and internal consultation we model and analyze a number of ingenious options. Options are presented and through rationalization we assist in selecting the best design strategy. Detailed design & modelling is then performed to ensure the product is production ready.

03 _ Deliver

A production plan is prepared ensuring production capacity and quality control are maintained to standard. The Supply chain system is set up to ensure all delivery requirements are achieved. Manufacturing commences and delivery satisfaction is measured.

04 _ Listen

As a continuous improvement organisation listening never stops. Through after-sales support and listening to feedback we learn, we resolve and we support our customers. We add to our knowledge base and prove new ways to offer customers the best.

Bronze

Bronzes are copper-based alloys consisting mainly of 80 - 95% copper with other alloying elements, including tin, silicon, nickel, aluminum, iron, zinc, or manganese. Bronze is a highly ductile material and exhibits relatively lower friction against other metals. Bronze is the most preferred material when there is a requirement of high strength, hardness, wear resistance, and corrosion resistance, particularly in marine applications.

As Bronze is mainly produced through casting, Kormax offers the most efficient casting facilities, including continuous casting and centrifugal casting. Continuous casting can produce diameters from 1"/25mm up to 10"/254mm with square and rectangular profiles. While centrifugal casting can produce diameters from 8"/203mm up to 118"/3000mm spun bronze castings. Hence, Kormax fulfilled all your bronze material needs by providing high-quality bronze materials.



80 - 95% copper

Bronze is the name for metal usually consisting of 80 - 95% copper with the balance made up of one or more other metals, such as tin, silicon, nickel, aluminium, iron, zinc or manganese.

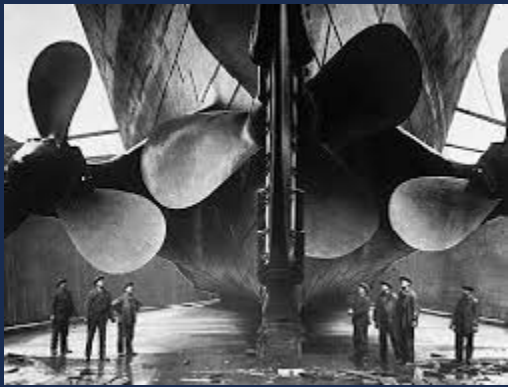
3000 BC

ancient man discovered that adding a small percentage of tin



to copper greatly increased it's strength, hence the beginning of the **Bronze Age**

strength & corrosion resistance



Bronze is a favoured material when **strength and corrosion resistance** are called for.

Bronze

LEADED BRONZE

- 10 LG2 Leaded Gunmetal Bronze
- 14 SAE660 / 932 Leaded Bronze

ALUMINIUM BRONZE

- 16 954 Aluminium Bronze
- 20 AB2 Nickel Aluminium Bronze
- 22 630 Nickel Aluminium Bronze

PHOSPHOR BRONZE

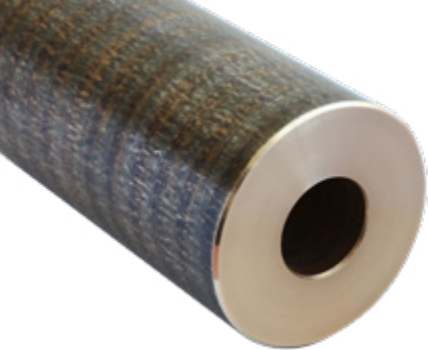
- 24 PB1 Phosphor Bronze
- 26 C51900 Bronze Sheet

HIGH-PERFORMANCE BRONZES

- 27 729 Copper Nickel

SINTERED BRONZE

- 28 Sintered Bronze



LG2 Leaded Gunmetal Bronze

Key Features

- ★ Excellent machining properties
- ★ Medium strength
- ★ Good pressure tightness
- ★ Not subject to dezincification
- ★ Reasonable corrosion resistance to seawater

Common Applications

- + Air actuators
- + Architecture
- + Couplings
- + Electrical hardware
- + Faucets, fixtures & pipe fittings
- + Furnaces
- + Heating equipment
- + Impellers
- + Marine parts
- + Medium load bearings
- + Printing presses
- + Pump parts
- + Small gears
- + Transducer housings
- + Valve bodies and valves

Comparative Specifications

BS1400 – LG2;
AS1565 83600; SAE 40;
JIS (Japan) H5121 – CAC402C (BC6);
DIN (Germany) 1705 – RG5;
ISO 1338 – CuPb5Sn5Zn5;
BS EN 1982 CuSn5Zn5Pb5

Overview

LG2 Bronze is one of the most used grades of bronze in industry. It has medium strength, excellent machining properties, and suitable for bearings, gears and other components used in relatively light-duty applications. Although LG2 is often referred to as phosphor bronze, it is, in fact, leaded gunmetal. Only the “PB” group of bronzes (PB1, PB2 etc.) can genuinely be called phosphor bronze.

All Kormax LG2 bronze is manufactured using finely controlled continuous or centrifugal casting techniques to ensure that hardness and strength is superior to sand-casting methods. It also means that the material has a fine grain structure and is free from porosity.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
● Solid Round	12.7-304.8mm	1/2"-12"	In Stock
○ Hollow Round	25.4-381 mm	1"-15"	In Stock
■ Square Bar	50.8 x 50.8mm	2" x 2"	In Stock

Other sizes and custom profiles available upon request

Chemical Composition

Element	Symbol	Range %	Nominal %
Tin	Sn	4.0-6.0	4.4
Lead	Pb	4.0-6.0	5.5
Zinc	Zn	4.0-6.0	5.5
Nickel	Ni	1.0 maximum	
Iron	Fe	0.30 maximum	
Aluminium	Al	0.005 maximum	
Antimony	Sb	0.25 maximum	
Copper	Cu	Balance	

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength	248 N/mm2	36000 psi
Yield Strength Min	131 N/mm2	19000 psi
Elongation Min	15%	15%
Hardness Min	60 BHN	60 BHN

Machining Allowances

All Kormax LG2 Bronze bar has machining allowances added to the sizes quoted. To use 4-1/2" x 2-1/2" hollow bar as an example, this material would measure approximately 4.570" OD x 2.440" ID as supplied. Therefore this allows finished components measuring 4-1/2" OD x 2-1/2" ID to be easily manufactured from 4-1/2" x 2-1/2" hollow bar.

Outside Diameter		Inside Diameter	
Size Range	Allowance	Size Range	Allowance
up to 3-3/4"	+0.040"	up to 3-3/4"	-0.060"
4" to 5"	+0.070"	4" to 5"	-0.090"
5-1/4" to 6"	+0.094"	5 1/4" to 6"	-0.108"
6-1/4" to 18"	+0.109"	6 1/4" to 18"	-0.120"

Solid Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
12.7mm	1/2"	1.42
15.9mm	5/8"	2.15
19.05mm	3/4"	3.03
22.22mm	7/8"	4.06
25.4mm	1"	5.18
28.57mm	1 1/8"	6.5
31.8mm	1 1/4"	7.96
35mm	1 3/8"	9.58
38.1mm	1 1/2"	11.24
41.27mm	1 5/8"	13.14
44.45mm	1 3/4"	15.19
50.8mm	2"	19.73
57.15mm	1 1/4"	24.86
63.5mm	2 1/2"	30.58
69.85mm	2 3/4"	36.38
76.2mm	3"	43.19
82.55mm	3 1/4"	50.58
88.9mm	3 1/2"	58.56 >

Metric Sizes	Imperial Sizes	Kg/MTR
95.3mm	3 3/4"	66.48
101.6mm	4"	76.67
114.3mm	4 1/2"	96.66
120.65mm	4 3/4"	106.48
127.0mm	5"	117.82
139.7mm	5 1/2"	143.43
152.4mm	6"	170.21
165.1mm	6 1/2"	200.2
178mm	7"	231.63
203.2mm	8"	301.38
229mm	9"	380.3
254mm	10"	468
304.8mm	12"	672.05

Square Bar

Metric Sizes	Imperial Sizes	Kg/MTR
50.8 x 50.8mm	2" x 2"	26



Hollow Round Bar



Metric Sizes	Imperial Sizes	Kg/MTR
25.4 x 12.7mm	1" x 1/2"	4.48
25.4 x 19.05mm	1" x 3/4"	3.19
28.57 x 12.7mm	1 1/8" x 1/2"	5.74
28.57 x 19.05mm	1 1/8" x 3/4"	4.53
31.75 x 12.7mm	1 1/4" x 1/2"	7.2
31.75 x 15.87mm	1 1/4" x 5/8"	6.64
31.75 x 19.05mm	1 1/4" x 3/4"	5.94
31.75 x 25.4mm	1 1/4" x 1"	4.07
34.92 x 19.05mm	1 3/8" x 3/4"	7.55
38.1 x 12.7mm	1 1/2" x 1/2"	10.59
38.1 x 19.05mm	1 1/2" x 3/4"	9.32
38.1 x 25.4mm	1 1/2" x 1"	7.45
41.27 x 19.05mm	1 5/8" x 3/4"	11.14
41.27 x 25.4mm	1 5/8" x 1"	9.37
41.27 x 31.75mm	1 5/8" x 1 1/4"	6.91
44.45 x 12.7mm	1 3/4" x 1/2"	14.44
44.45 x 19.05mm	1 3/4" x 3/4"	13.18
44.45 x 25.4mm	1 3/4" x 1"	11.33
44.45 x 31.75mm	1 3/4" x 1 1/4"	8.97
44.45 x 38.1mm	1 3/4" x 1 1/2"	5.91
50.8 x 19.05mm	2" x 3/4"	17.72
50.8 x 25.4mm	2" x 1"	15.87
50.8 x 31.75mm	2" x 1 1/4"	13.43
50.8 x 38.1mm	2" x 1 1/2"	10.49
50.8 x 44.45mm	2" x 1 3/4"	6.83
57.15 x 25.4mm	2 1/4" x 1"	21
57.15 x 31.75mm	2 1/4" x 1 1/4"	18.56
57.15 x 38.1mm	2 1/4" x 1 1/2"	15.53
57.15 x 44.45mm	2 1/4" x 1 3/4"	11.9
57.15 x 50.8mm	2 1/4" x 2"	8.4
63.5 x 12.7mm	2 1/2" x 1/2"	29.83
63.5 x 19.05mm	2 1/2" x 3/4"	28.58
63.5 x 25.4mm	2 1/2" x 1"	26.73
63.5 x 31.8mm	2 1/2" x 1 1/4"	24.29
63.5 x 38.1mm	2 1/2" x 1 1/2"	21.25
63.5 x 44.45mm	2 1/2" x 1 3/4"	17.63
63.5 x 50.8mm	2 1/2" x 2"	13.41
69.85 x 25.4mm	2 3/4" x 1"	32.58
69.85 x 31.75mm	2 3/4" x 1 1/4"	30.61
69.85 x 38.1mm	2 3/4" x 1 1/2"	27.57
69.85 x 44.45mm	2 3/4" x 1 3/4"	23.95
69.85 x 50.8mm	2 3/4" x 2"	19.73
69.85 x 57.15mm	2 3/4" x 2 1/4"	14.92
76.2 x 25.4mm	3" x 1"	39.39
76.2 x 31.8mm	3" x 1 1/4"	36.99
76.2 x 38.1mm	3" x 1 1/2"	34 >

Metric Sizes	Imperial Sizes	Kg/MTR
76.2 x 44.45mm	3" x 1 3/4"	30.85
76.2 x 50.8mm	3" x 2"	26.64
76.2 x 57.15mm	3" x 2 1/4"	21.82
76.2 x 63.5mm	3" x 2 1/2"	17.3
82.55 x 25.4mm	3 1/4" x 1"	46.79
82.55 x 31.75mm	3 1/4" x 1 1/4"	44.38
82.55 x 38.1mm	3 1/4" x 1 1/2"	41.39
82.55 x 50.8mm	3 1/4" x 2"	33.66
82.55 x 57.15mm	3 1/4" x 2 1/4"	29.33
82.55 x 63.5mm	3 1/4" x 2 1/2"	23.92
88.9 x 25.4mm	3 1/2" x 1"	54.77
88.9 x 31.75mm	3 1/2" x 1 1/4"	52.36
88.9 x 38.1mm	3 1/2" x 1 1/2"	49.37
88.9 x 44.45mm	3 1/2" x 1 3/4"	45.8
88.9 x 50.8mm	3 1/2" x 2"	41.64
88.9 x 57.15mm	3 1/2" x 2 1/4"	36.9
88.9 x 63.5mm	3 1/2" x 2 1/2"	32.02
88.9 x 69.85mm	3 1/2" x 2 3/4"	26.02
88.9 x 76.2mm	3 1/2" x 3"	20.26
95.25 x 25.4mm	3 3/4" x 1"	62.73
95.25 x 31.75mm	3 3/4" x 1 1/4"	60.93
95.25 x 38.1mm	3 3/4" x 1 1/2"	57.94
95.25 x 44.45mm	3 3/4" x 1 3/4"	54.36
95.25 x 50.8mm	3 3/4" x 2"	50.21
95.25 x 57.15mm	3 3/4" x 2 1/4"	45.46
95.25 x 63.5mm	3 3/4" x 2 1/2"	40.14
95.25 x 69.85mm	3 3/4" x 2 3/4"	34.23
95.25 x 76.2mm	3 3/4" x 3"	28.12
101.6 x 25.4mm	4" x 1"	72.91
101.6 x 38.1mm	4" x 1 1/2"	67.57
101.6 x 44.45mm	4" x 1 3/4"	64.03
102 x 51mm	4" x 2"	60.49
101.6 x 57.15mm	4" x 2 1/4"	55.75
101.6 x 63.5mm	4" x 2 1/2"	50.42
101.6 x 69.85mm	4" x 2 3/4"	44.51
102 x 76mm	4" x 3"	38.02
101.6 x 82.55mm	4" x 3 1/4"	31.37
101.6 x 88.9mm	4" x 3 1/2"	24.14
107.95 x 38.1mm	4 1/4" x 1 1/2"	77.28
107.95 x 50.8mm	4 1/4" x 2"	69.62
107.95 x 69.85mm	4 1/4" x 2 3/4"	54.31
107.95 x 76.2mm	4 1/4" x 3"	47.82
107.95 x 82.55mm	4 1/4" x 3 1/4"	40.74
107.95 x 88.9mm	4 1/4" x 3 1/2"	33.08
114.3 x 38.1mm	4 1/2" x 1 1/2"	87.56
114.3 x 50.8mm	4 1/2" x 2"	79.91 >

Hollow Round Bar (continued)



Metric Sizes	Imperial Sizes	Kg/MTR
114.3 x 57.15mm	4 1/2" x 2 1/4"	75.21
114.3 x 63.5mm	4 1/2" x 2 1/2"	69.94
114.3 x 69.85mm	4 1/2" x 2 3/4"	64.09
114.3 x 76.2mm	4 1/2" x 3"	58.21
114.3 x 82.55mm	4 1/2" x 3 1/4"	51.13
114.3 x 88.9mm	4 1/2" x 3 1/2"	43.47
114.3 x 95.25mm	4 1/2" x 3 3/4"	35.22
114.3 x 101.6mm	4 1/2" x 4"	27.12
120.65 x 50.8mm	4 3/4" x 2"	90.77
120.65 x 69.85mm	4 3/4" x 2 3/4"	74.95
120.65 x 76.2mm	4 3/4" x 3"	68.52
120.65 x 82.55mm	4 3/4" x 3 1/4"	62.1
120.65 x 88.9mm	4 3/4" x 3 1/2"	54.44
120.65 x 95.25mm	4 3/4" x 3 3/4"	46.19
120.65 x 101.6mm	4 3/4" x 4"	37.73
127 x 38.1mm	5" x 1 1/2"	108.81
127 x 50.8mm	5" x 2"	102.22
127 x 57.15mm	5" x 2 1/4"	97.52
127 x 63.5mm	5" x 2 1/2"	92.25
127 x 69.85mm	5" x 2 3/4"	86.4
127 x 76.2mm	5" x 3"	79.96
127 x 88.9mm	5" x 3 1/2"	65.37
127 x 101.6mm	5" x 4"	49.28
127 x 107.95mm	5" x 4 1/4"	39.89
133.35 x 76.2mm	5 1/4" x 3"	93.17
133.35 x 88.9mm	5 1/4" x 3 1/2"	78.57
133.35 x 101.6mm	5 1/4" x 4"	62.62
133.35 x 107.95mm	5 1/4" x 4 1/4"	53.22
139.7 x 63.5mm	5 1/2" x 2 1/2"	116.97
139.7 x 76.2mm	5 1/2" x 3"	104.81
139.7 x 88.9mm	5 1/2" x 3 1/2"	91.23
139.7 x 95.25mm	5 1/2" x 3 3/4"	82.27
139.7 x 101.6mm	5 1/2" x 4"	74.68
139.7 x 114.3mm	5 1/2" x 4 1/2"	56.03
152.4 x 50.8mm	6" x 2"	153.63
152.4 x 63.5mm	6" x 2 1/2"	143.76
152.4 x 76.2mm	6" x 3"	131.6
152.4 x 88.9mm	6" x 3 1/2"	117.14
152.4 x 101.6mm	6" x 4"	101.73
152.4 x 107.95mm	6" x 4 1/4"	92.43
152.4 x 114.3mm	6" x 4 1/2"	82.55
152.4 x 127mm	6" x 5"	61.63
152.4 x 139.7mm	6" x 5 1/2"	38.81
158.75 x 139.7mm	6 1/4" x 5 1/2"	54.23
165.1 x 76.2mm	6 1/2" x 3"	161.58
165.1 x 101.6mm	6 1/2" x 4"	130.74 >

Metric Sizes	Imperial Sizes	Kg/MTR
165.1 x 114.3mm	6 1/2" x 4 1/2"	111.75
165.1 x 127mm	6 1/2" x 5"	91.34
165.1 x 139.7mm	6 1/2" x 5 1/2"	68.73
171.45 x 127mm	6 3/4" x 5"	105.9
171.45 x 139.7mm	6 3/4" x 5 1/2"	84.31
177.8 x 76.2mm	7" x 3"	193.02
177.8 x 101.6mm	7" x 4"	162.18
177.8 x 114.3mm	7" x 4 1/2"	143.19
177.8 x 127mm	7" x 5"	121.9
177.8 x 139.7mm	7" x 5 1/2"	99.5
177.8 x 152.4mm	7" x 6"	74.47
190.5 x 101.6mm	7 1/2" x 4"	195.91
190.5 x 127mm	7 1/2" x 5"	155.63
190.5 x 139.7mm	7 1/2" x 5 1/2"	133.25
190.5 x 152.4mm	7 1/2" x 6"	107.49
190.5 x 165.1mm	7 1/2" x 6 1/2"	81.74
215 x 76.2mm	8 1/2" x 3"	262.77
203.2 x 101.6mm	8" x 4"	232.65
203.2 x 114.3mm	8" x 4 1/2"	213.75
203 x 127mm	8" x 5"	192.55
203.2 x 139.7mm	8" x 5 1/2"	169.27
203 x 152mm	8" x 6"	143.51
203.2 x 165.1mm	8" x 6 1/2"	116.99
203.2 x 177.8mm	8" x 7"	87.59
215.9 x 139.7mm	8 1/2" x 5 1/2"	207.58
215.9 x 152.4mm	8 1/2" x 6"	181.82
215.9 x 165.1mm	8 1/2" x 6 1/2"	155.3
215.9 x 177.8mm	8 1/2" x 7"	125.08
228.6 x 101.6mm	9" x 4"	311.56
228.6 x 152.4mm	9" x 6"	222.43
165.68mm	9" x 7"	165.68
228.6 x 190.5mm	9" x 7 1/2"	133.17
228.6 x 203.2mm	9" x 8"	99.3
254 x 127mm	10" x 5"	360.36
254 x 177.8mm	10" x 7"	253.77
254 x 203.2mm	10" x 8"	186.45
254 x 215.9mm	10" x 8 1/2"	149.35
254 x 228.6mm	10" x 9"	109.96
266.7 x 63.5mm	10 1/2" x 2 1/2"	196.83
279.4 x 203.2mm	11" x 8"	283.7
304.8 x 152.4mm	12" x 6"	514.94
304.8 x 203.2mm	12" x 8"	390.11
330.2 x 279.4mm	13" x 11"	248.75
355.6 x 203.2mm	14" x 8"	630.45
381 x 254mm	15" x 10"	602.23 .



SAE660 / 932 Leaded Bronze

Key Features

- ★ Excellent machining properties
- ★ Medium strength
- ★ Good bearing properties
- ★ Good pressure tightness
- ★ Not subject to dezincification
- ★ Reasonable corrosion resistance to seawater

Common Applications

- + Air actuators
- + Architecture
- + Couplings
- + Electrical hardware
- + Faucets, fixtures & pipe fittings
- + Furnaces
- + Heating equipment
- + Impellers
- + Marine parts
- + Medium load bearings
- + Printing presses
- + Pump parts
- + Small gears
- + Transducer housings
- + Valve bodies and valves

Comparative Specifications

AS1565 C93200; ASTM B505, B271 – C93200; SAE 660

Overview

Leaded Bronze C93200 or SAE 660 is a general-purpose leaded tin bronze bearing and bushing material. It has excellent machining properties, good hardness, strength, and wear resistance with excellent anti-frictional qualities. The alloy is not subject to dezincification and has good corrosion resistance to seawater and brine making it suitable for pump and valve components. 932 is suitable for bearings having medium loads and speeds with adequate lubrication.

The composition of 932 is strictly controlled as the casting conditions. All Kormax bronze is manufactured using finely controlled continuous or centrifugal casting techniques to ensure that hardness and strength are superior to sand-casting methods. It also means that the material has a fine grain structure and is free from porosity.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
Flat Bar	6.4 x 304.8 - 38.1 x 304.8	1/4 x 12 - 1 1/2 x 12	In Stock
Other sizes and custom profiles available upon request			

Chemical Composition

Element	Symbol	Range (%)	Nominal (%)
Tin	Sn	6.3 – 7.5	7.0
Lead	Pb	6.0 – 8.0	7.0
Zinc	Zn	2.0 – 4.0	3.0
Nickel	Ni	1.0 maximum	
Iron	Fe	0.20 maximum	
Aluminium	Al	0.005 maximum	
Antimony	Sb	0.35 maximum	
Phosphorus	P	0.15 maximum	
Copper	Cu	Balance	

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	240 N/mm2	35000 psi
Yield Strength Min	135 N/mm2	20000 psi
Elongation Min	20%	20%
Hardness Min	60 BHN	60 BHN

Machining Allowances

All Kormax 932 Bronze bar has machining allowances added to the sizes quoted. To use a 4-1/2" x 2-1/2" hollow bar as an example, this material would measure approximately 4.570" OD x 2.440" ID as supplied. Therefore this allows finished components measuring 4-1/2" OD x 2-1/2" ID to be easily manufactured from 4-1/2" x 2-1/2" hollow bar.

Finished Width	Thickness	Width
Up to 3.999"	+0.049" to +0.79	+0.049" to +0.79
Over 4" to 5"	+0.078" to +0.110"	+0.078" to +0.110"
Over 5.001"	+0.109" to +.141"	+0.109" to +.141"

Flat Bar

Metric Sizes	Imperial sizes	Kg/MTR
6.4 x 304.8	1/4 x 12	27.5
6.4 x 101.6	1/4 x 4	9.5
6.4 x 203.2	1/4 x 8	18.5
19.1 x 304.8	3/8 x 12	36.5
19.1 x 101.6	3/8 x 4	12.5
19.1 x 203.2	3/8 x 8	24.5 >

Metric Sizes	Imperial sizes	Kg/MTR
12.7 x 381	1/2 x 15	56.2
12.7 x 50	1/2 x 1.96	7.5
19.1 x 457.2	3/4 x 18	93.7
25.4 x 304.8	1 x 12	80.2
38.1 x 304.8	1 1/2 x 12	115.8





954 Aluminium Bronze

Key Features

- ★ High strength
- ★ Excellent wear resistance
- ★ Good machining qualities
- ★ Reasonable corrosion resistance
- ★ Good impact resistance

Common Applications

- + Bearing segments & bushings
- + Construction equipment parts
- + Forestry equipment parts
- + Gears, incl heavily loaded worm gears
- + High-strength clamps
- + Landing gear parts
- + Marine hardware
- + Mining equipment parts
- + Pressure blocks
- + Pump parts
- + Valves, bodies & guides
- + Worm gears

Comparative Specifications

AS1565 95400 | SAE J46 1,
J462 | DIN 1714 – G-CuAl11Fe4 | UNI
5274 – CuAl11Fe4

Overview

Alloy 954 is a high strength aluminium bronze widely used in heavy-duty applications such as forestry, mining, construction & marine.

It is a very hard material with excellent strength and wears resistance yet still retains good machining properties.

Alloy 954 also has good resistance to impact loading, but you should take note that proper lubrication is necessary to prevent metal to metal contact. Inadequate lubrication is likely to cause scoring or ‘galling’, and consequent damage to the bronze component or other moving parts. General corrosion resistance is good, but de-luminification may occur under some circumstances.

All Kormax 954 Aluminium Bronze is manufactured using finely controlled continuous or centrifugal casting techniques to ensure that hardness and strength is superior to sand-casting methods. It also means that the material has a fine grain structure and is free from porosity.

Material Profile

	Profile	Metric Size Range	Imperial Size Range	Availability
●	Solid Round	19.05-279.4mm	3/4-11"	In stock
○	Hollow Round	31.55-355.6mm	1 1/4-14"	In Stock
■	Flat Bar	6.35-76.2mm	1/4-3"	In Stock
■	Square Bar	25.4-50.8mm	1-2"	In Stock

Other sizes and custom profiles available upon request

Chemical Composition

Element	Symbol	Range %	Nominal %
Aluminium	Al	10.0-11.5	10.5
Iron	Fe	3.0-5.0	4.0
Nickel	Ni	1.5 maximum	0.5 maximum
Manganese	Mn	0.5 maximum	
Copper	Cu	Balance	

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength	586 N/mm2	85000 psi
Yield Strength	221 N/mm2	32000 psi
Elongation Min	12%	12%
Hardness	170 BHN	170 BHN

Machining Allowances

All Kormax 954 Aluminium Bronze bar has machining allowances added to the sizes quoted. To use a 4-1/2" x 2-1/2" hollow bar as an example, this material would measure approximately 4.650" OD x 2.375" ID as supplied. Therefore this allows finished components measuring 4-1/2" OD x 2-1/2" ID to get easily manufactured from 4-1/2" x 2-1/2" hollow bar.

Finished Width	Thickness	Width
Up to 3"	+0.067" to +.0107"	+0.043" to 0.086"
Over 3" to 5 ½"	+0.067" to +.0107"	+0.043" to 0.086"
Over 5 ½" to 12"	+0.087" to +0.127"	+0.063" to 0.113"
Over 12"	+0.163" to +0.263"	+0.125" to +0.225"

Note: Thicknesses of rectangles 3" and thicker will use the over 12" wide tolerances.

Outside Diameter		Inside Diameter	
Size Range	Allowance	Size Range	Allowance
up to 2-3/4"	+0.072"	up to 2-3/4"	-0.125"
3" to 4"	+0.110"	3" to 4"	-0.125"
4-1/4" to 6-1/2"	+0.150"	4-1/4" to 6-1/2"	-0.145"
7" to 8"	+0.190"	7" to 8"	-0.200"
8-1/2" to 20"	+0.125"	8-1/2" to 18"	-0.125"



954 Flat Bar



Metric Sizes	Imperial Sizes	Kg/MTR
6.35 x 25.4mm	1/4" x 1"	2.02
6.35 x 38.1mm	1/4" x 1 1/2"	2.84
6.35 x 50.8mm	1/4" x 2"	3.66
6.35 x 63.5mm	1/4" x 2 1/2"	4.48
6.35 x 76.2mm	1/4" x 3"	5.3
6.35 x 101.6mm	1/4" x 4"	6.94
6.35 x 152.4mm	1/4" x 6"	10.22
9.52 x 50.8mm	3/8" x 2"	4.8
9.52 x 76.2mm	3/8" x 3"	7.1
9.52 x 152.4mm	3/8" x 6"	14
12.7 x 38.1mm	1/2" x 1 1/2"	5
12.7 x 50.8mm	1/2" x 2"	6
12.7 x 76.2mm	1/2" x 3"	9
12.7 x 152.4mm	1/2" x 6"	18
15.87 x 50.8mm	5/8" x 2"	7.8
15.87 x 76.2mm	5/8" x 3"	11.2
15.87 x 152.4mm	5/8" x 6"	21.9
19.05 x 25.4mm	3/4" x 1"	5
19.05 x 50.8mm	3/4" x 2"	9.1
19.05 x 63.5mm	3/4" x 2 1/2"	11.1
19.05 x 101.6mm	3/4" x 4"	17.2
19.05 x 152.4mm	3/4" x 6"	26.2
25.4 x 31.75mm	1" x 1 1/4"	7.8
25.4 x 50.8mm	1" x 2"	11.5
25.4 x 63.5mm	1" x 2 1/2"	14.6
25.4 x 76.2mm	1" x 3"	17.2
25.4 x 101.6mm	1" x 4"	22.6
25.4 x 152.4mm	1" x 6"	34.1
31.75 x 38.1mm	1 1/4" x 1 1/2"	12.2
31.75 x 50.8mm	1 1/4" x 2"	15.5
31.75 x 76.2mm	1 1/4" x 3"	21.2
31.75 x 127mm	1 1/4" x 5"	32.2
38.1 x 76.2mm	1 1/2" x 3"	25.3
38.1 x 152.4mm	1 1/2" x 6"	53.5
50 x 200mm	2" x 7 7/8"	85
50.8 x 63.5mm	2" x 2 1/2"	29
50.8 x 152.4mm	2" x 6"	67.2
76.2 x 152.4mm	3" x 6"	93

954 Square Bar



Metric Sizes	Imperial Sizes	Kg/MTR
25.4 x 25.4mm	1" x 1"	6.2
38.1 x 38.1mm	1 1/2" x 1 1/2"	12.5
50.8 x 50.8mm	2" x 2"	23.2

954 Solid Round Bar



Metric Sizes	Imperial Sizes	Kg/MTR
19.05mm	3/4"	2.75
22.22mm	7/8"	3.92
25.4mm	1"	4.99
31.8mm	1 1/4"	7.03
38.1mm	1 1/2"	9.94
44.45mm	1 3/4"	13.22
50.8mm	2"	17.1
57.15mm	2 1/4"	21.47
63.5mm	2 1/2"	26.35
69.85mm	2 3/4"	31.27
76.2mm	3"	37.97
82.55mm	3 1/4"	44.32
88.9mm	3 1/2"	51.16
95.3mm	3 3/4"	58.5
101.6mm	4"	65.68
114.3mm	4 1/2"	84.07
127.0mm	5"	102.12
139.7mm	5 1/2"	122.92
152.4mm	6"	145.63
178mm	7"	199.06
203.2mm	8"	258.28
254mm	10"	394.73
279.4mm	11"	476.48

954 Hollow Round Bar



Metric Sizes	Imperial Sizes	Kg/MTR
31.75 x 19.05mm	1 1/4" x 3/4"	5.71
38.1 x 19.05mm	1 1/2" x 3/4"	8.61
38.1 x 25.4mm	1 1/2" x 1"	7.19
44.45 x 19.05mm	1 3/4" x 3/4"	12.03
44.45 x 25.4mm	1 3/4" x 1"	10.6
44.45 x 31.75mm	1 3/4" x 1 1/4"	8.67
50.8 x 19.05mm	2" x 3/4"	15.79
50.8 x 25.4mm	2" x 1"	14.38
50.8 x 31.75mm	2" x 1 1/4"	12.47
50.8 x 38.1mm	2" x 1 1/2"	10.16
57.15 x 25.4mm	2 1/4" x 1"	18.76
57.15 x 31.75mm	2 1/4" x 1 1/4"	16.85
57.15 x 38.1mm	2 1/4" x 1 1/2"	14.44
57.15 x 44.45mm	2 1/4" x 1 3/4"	11.54
63.5 x 25.4mm	2 1/2" x 1"	23.63
63.5 x 31.8mm	2 1/2" x 1 1/4"	21.72
63.5 x 38.1mm	2 1/2" x 1 1/2"	19.32

954 Hollow Round Bar (continued)



Metric Sizes	Imperial Sizes	Kg/MTR
63.5 x 44.45mm	2 1/2" x 1 3/4"	16.41
63.5 x 50.8mm	2 1/2" x 2"	13.01
69.85 x 31.75mm	2 3/4" x 1 1/4"	27.09
69.85 x 38.1mm	2 3/4" x 1 1/2"	24.69
69.85 x 44.45mm	2 3/4" x 1 3/4"	21.78
69.85 x 50.8mm	2 3/4" x 2"	18.38
69.85 x 57.15mm	2 3/4" x 2 1/4"	14.48
76.2 x 25.4mm	3" x 1"	35.3
76.2 x 38.1mm	3" x 1 1/2"	31.49
76.2 x 50.8mm	3" x 2"	25.19
76.2 x 57.15mm	3" x 2 1/4"	21.29
76.2 x 63.5mm	3" x 2 1/2"	16.89
82.55 x 31.75mm	3 1/4" x 1 1/4"	39.77
82.55 x 38.1mm	3 1/4" x 1 1/2"	37.4
82.55 x 50.8mm	3 1/4" x 2"	31.63
82.55 x 57.15mm	3 1/4" x 2 1/4"	27.73
82.55 x 63.5mm	3 1/4" x 2 1/2"	23.33
88.9 x 25.4mm	3 1/2" x 1"	48.49
88.9 x 38.1mm	3 1/2" x 1 1/2"	44.24
88.9 x 44.45mm	3 1/2" x 1 3/4"	41.97
88.9 x 50.8mm	3 1/2" x 2"	38.03
88.9 x 57.15mm	3 1/2" x 2 1/4"	34.19
88.9 x 63.5mm	3 1/2" x 2 1/2"	30.27
88.9 x 69.85mm	3 1/2" x 2 3/4"	25.38
88.9 x 76.2mm	3 1/2" x 3"	19.98
95.25 x 63.5mm	3 3/4" x 2 1/2"	37.18
95.25 x 69.85mm	3 3/4" x 2 3/4"	32.36
95.25 x 76.2mm	3 3/4" x 3"	27.42
101.6 x 25.4mm	4" x 1"	63.04
101.6 x 38.1mm	4" x 1 1/2"	59.4
102 x 51mm	4" x 2"	53.18
101.6 x 63.5mm	4" x 2 1/2"	45.01
102 x 76mm	4" x 3"	34.87
101.6 x 82.55mm	4" x 3 1/4"	29.47
101.6 x 88.9mm	4" x 3 1/2"	23.08
107.95 x 76.2mm	4 1/4" x 3"	44.56
107.95 x 82.55mm	4 1/4" x 3 1/4"	38.75
107.95 x 88.9mm	4 1/4" x 3 1/2"	32.45
114.3 x 38.1mm	4 1/2" x 1 1/2"	77.22
114.3 x 50.8mm	4 1/2" x 2"	71.07
114.3 x 63.5mm	4 1/2" x 2 1/2"	62.97
114.3 x 76.2mm	4 1/2" x 3"	53.44
114.3 x 88.9mm	4 1/2" x 3 1/2"	41.34

Metric Sizes	Imperial Sizes	Kg/MTR
114.3 x 101.6mm	4 1/2" x 4"	27.27
120.65 x 95.25mm	4 3/4" x 3 3/4"	43.92
120.65 x 101.6mm	4 3/4" x 4"	36.65
127 x 50.8mm	5" x 2"	90.12
127 x 76.2mm	5" x 3"	71.99
127 x 82.55mm	5" x 3 1/4"	66.87
127 x 88.9mm	5" x 3 1/2"	60.57
127 x 101.6mm	5" x 4"	46.51
139.7 x 76.2mm	5 1/2" x 3"	92.98
139.7 x 88.9mm	5 1/2" x 3 1/2"	81
139.7 x 101.6mm	5 1/2" x 4"	67.07
139.7 x 114.3mm	5 1/2" x 4 1/2"	52.37
152.4 x 50.8mm	6" x 2"	132.76
152.4 x 63.5mm	6" x 2 1/2"	124.75
152.4 x 76.2mm	6" x 3"	114.81
152.4 x 88.9mm	6" x 3 1/2"	103.94
152.4 x 101.6mm	6" x 4"	90.01
152.4 x 114.3mm	6" x 4 1/2"	74.82
152.4 x 127mm	6" x 5"	57.62
165.1 x 101.6mm	6 1/2" x 4"	113.79
165.1 x 114.3mm	6 1/2" x 4 1/2"	98.08
165.1 x 127mm	6 1/2" x 5"	80.44
165.1 x 139.7mm	6 1/2" x 5 1/2"	60.87
177.8 x 76.2mm	7" x 3"	168.23
177.8 x 101.6mm	7" x 4"	142.57
177.8 x 127mm	7" x 5"	109.96
177.8 x 139.7mm	7" x 5 1/2"	90.47
190.5 x 127mm	7 1/2" x 5"	138.61
190.5 x 139.7mm	7 1/2" x 5 1/2"	119.12
203.2 x 101.6mm	8" x 4"	201.79
203 x 127mm	8" x 5"	169.18
203 x 152mm	8" x 6"	128.28
203.2 x 165.1mm	8" x 6 1/2"	104.94
228.6 x 152.4mm	9" x 6"	190.61
228.6 x 190.5mm	9" x 7 1/2"	117.92
254 x 127mm	10" x 5"	305.64
254 x 203.2mm	10" x 8"	168
279.4 x 177.8mm	11" x 7"	297.95
279.4 x 228.6mm	11" x 9"	181.38
304.8 x 177.8mm	12" x 7"	387.48
330.2 x 254mm	13" x 10"	296.84
355.6 x 203.2mm	14" x 8"	533.32



AB2 Nickel Aluminium Bronze

Key Features

- ★ Suitable for marine applications
- ★ Superior corrosion resistance
- ★ Superior wear resistance

Common Applications

- + Bushings
- + Gears
- + Marine hardware
- + Propeller blades
- + Propeller hub
- + Sea water valves
- + Shafts
- + Ship building
- + Valve bodies
- + Wear plates
- + Worm wheels & worms

Comparative Specifications

BS1400 – AB2; AS1565 C95810*; JIS H5121 – CAC703C (A1BC3)*; DIN 1714 – G-CuAl10Ni*; ISO 1338 – CuAl10Fe5Ni5 ; BS EN 1982 CuAl10Fe5Ni5*

*Similar but not identical

Overview

Alloy AB2 is a nickel aluminium bronze widely used in marine applications. The nickel content in this material means that it has superior corrosion resistance to marine conditions. AB2 also has high strength and good wear resistance, making it suitable for bearings, gears and other components with heavy loads and slow speeds. Good lubrication and alignment are required to ensure optimum performance.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
● Solid Round	25.4-152.4mm	1-6"	In Stock
○ Hollow Round	22.22-342.9mm	7/8-13 1/2"	In Stock

Other sizes and custom profiles available upon request. Also available in 955.

Chemical Composition

Element	Symbol	Range %	Nominal %
Aluminium	Al	8.8-10.0	9.5
Iron	Fe	4.0-5.5	4.8
Nickel	Ni	4.0-5.5	5.0
Manganese	Mn	3.0 maximum	
Tin	Sn	0.1 maximum	
Lead	Pb	0.03 maximum	
Zinc	Zn	0.5 maximum	
Copper	Cu	Balance	

Physical Properties

Material	Metric	Imperial
Tensile Strength Min	586 N/mm2	85000 psi
Yield Strength Min	241 N/mm2	35000 psi
Elongation Min	18%	18%
Hardness Min	159 BHN	159 BHN

Solid Round Bar



Metric Sizes	Imperial Sizes	Kg/MTR
22.22mm	7/8"	3.7
25.4mm	1"	4.99
38.1mm	1 1/2"	10.19
44.45mm	1 3/4"	13.35
50.8mm	2"	17.53
57.15mm	2 1/4"	21.68
63.5mm	2 1/2"	27.02
70.0mm	2 3/4"	32.06
76.2mm	3"	38.94
88.9mm	3 1/2"	52.47
101.6mm	4"	67.36
114.3mm	4 1/2"	86.22
127.0mm	5"	104.73
139.7mm	5 1/2"	126.05
152.4mm	6"	149.35

Hollow Round Bar



Metric Sizes	Imperial Sizes	Kg/MTR
50.8 x 25.4mm	2" x 1"	14.74
63.5 x 25.4mm	2 1/2" x 1"	24.22
63.5 x 38.1mm	2 1/2" x 1 1/2"	19.8
76.2 x 38.1mm	3" x 1 1/2"	31.83
76.2 x 50.8mm	3" x 2"	25.45
88.9 x 25.4mm	3 1/2" x 1"	47.1
88.9 x 38.1mm	3 1/2" x 1 1/2"	45.36
88.9 x 50.8mm	3 1/2" x 2"	38.98
102 x 51mm	4" x 2"	54.52
102 x 76mm	4" x 3"	35.73
114.3 x 50.8mm	4 1/2" x 2"	72.87
114.3 x 63.5mm	4 1/2" x 2 1/2"	64.56
114.3 x 76.2mm	4 1/2" x 3"	54.26
127 x 76.2mm	5" x 3"	73.8
127 x 101.6mm	5" x 4"	47.66
152.4 x 76.2mm	6" x 3"	117.71
152.4 x 101.6mm	6" x 4"	92.27
177.8 x 101.6mm	7" x 4"	146.17
203 x 127mm	8" x 5"	173.45
342.9 x 279.4mm	13 1/2" x 11"	269.71

Machining Allowances

All Kormax AB2 Aluminium Bronze bar has machining allowances added to the sizes quoted. To use 4-1/2" x 2-1/2" hollow bar as an example, this material would measure approximately 4.650" OD x 2.375" ID as supplied (see table below). Therefore this allows finished components measuring 4-1/2" OD x 2-1/2" ID to get easily manufactured from 4-1/2" x 2-1/2" hollow bar. Machining allowances are as follows:

Outside Diameter		Inside Diameter	
Size Range	Allowance	Size Range	Allowance
up to 2-3/4"	+0.072"	up to 2-3/4"	-0.125"
3" to 4"	+0.110"	3" to 4"	-0.125"
4-1/4" to 6-1/2"	+0.150"	4-1/4" to 6-1/2"	-0.145"
7" to 8"	+0.190"	7" to 8"	-0.200"
8-1/2" to 20"	+0.125"	8-1/2" to 18"	-0.125"





630 Nickel Aluminium Bronze

Key Features

- ★ Wide variety of sizes in small increments
- ★ Extruded material gives superior strength
- ★ Exceptional wear & corrosion resistance
- ★ Suitable for use in marine environments
- ★ Good impact resistance

Common Applications

- + Aircraft parts
- + Faucets
- + Hydraulic bushings for earth moving equipment
- + Landing gear parts
- + Marine fasteners & fittings
- + Pump parts
- + Shafting
- + Ship propellers
- + Valve seats, guides & balls

Machining Allowances

● Round		
Size Range	Tolerance (mm)	Tolerance (inch)
up to 1/2"	+/- 0.051	+/- 0.002
1/2" to 1"	+/- 0.076	+/- 0.003
1" to 2"	+/- 0.11	+/- 0.004
2" +	+/- 0.20% of the diameter	+/- 0.20% of the diameter

Example of the over 2" diameter tolerance:
2-1/2" diameter x 0.002 (0.20%) = 0.005" (0.13mm).

Overview

Alloy C63000 is a high-quality extruded material widely used in challenging, demanding and corrosive environments. Its exceptional toughness means it is used in applications such as bushings for aircraft landing gear and hydraulic bushings for earthmoving equipment.

The nickel content in this material means that it has superior corrosion resistance to marine conditions. Nickel aluminium also has high strength and good wear resistance, making it suitable for bearings, gears and other components with heavy loads and slow speeds. Adequate lubrication and alignment are essential in bushing applications to ensure optimum performance.

The chemical composition of C63000 is very similar to AB2 Bronze. However, being extruded means it has superior tensile strength, hardness and ductility. A further advantage with this material being extruded is that the diameter quoted is “on size” and has a clean surface finish making it an ideal solution for marine fasteners and fittings such as keel bolts, studs and other parts.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
● Solid Round	9.52-88.9mm	3/8-3 1/2"	In Stock
Other sizes and custom profiles available upon request			

Chemical Composition

Element	Symbol	Range %	Nominal %
Aluminium	Al	9.0-11.0	10.0
Iron	Fe	2.0-4.0	3.0
Nickel	Ni	4.0-5.5	5.0
Manganese	Mn	1.5 maximum	
Tin	Sn	0.2 maximum	
Zinc	Zn	0.3 maximum	
Silicon	Si	0.25 maximum	
Copper	Cu	Balance	

Physical Properties

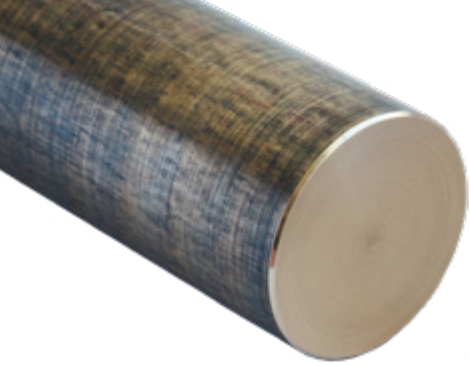
Material	Metric Values	Imperial Values
Tensile Strength Min	760 N/mm2	110000 psi
Yield Strength Min	470 N/mm2	68000 psi
Elongation Min	10%	10%
Hardness Min	225 BHN	225 BHN

Solid Round Bar

Metric Sizes,	Imperial Sizes	Kg/MTR
9.52mm	3/8"	0.55
11.11mm	7/16"	0.74
12.7mm	1/2"	0.97
14.28mm	9/16"	1.26
15.9mm	5/8"	1.51
17.46mm	11/16"	1.82
19.05mm	3/4"	2.17
20.63mm	13/16"	2.54
22.22mm	7/8"	2.95
23.81mm	1"	3.38
25.4mm	1"	3.85
28.57mm	1 1/8"	4.87
30mm	1 1/6"	5.42 >

Metric Sizes	Imperial Sizes	Kg/MTR
31.8mm	1 1/4"	6.01
35mm	1 3/8"	7.27
38.1mm	1 1/2"	8.65
39.68mm	1 9/16"	9.38
41.27mm	1 5/8"	10.15
44.45mm	1 3/4"	11.77
47.62mm	1 7/8"	13.51
50.8mm	2"	15.37
53.97mm	2 1/8"	17.35
57.15mm	2 1/4"	19.45
63.5mm	2 1/2"	24.01
76.2mm	3"	34.57
88.9mm	3 1/2"	47.06





PB1 Phosphor Bronze

Key Features

- ★ Handles high working loads
- ★ Good for high working speeds
- ★ Suitable for pump and valve components
- ★ Good corrosion resistance to seawater and brine
- ★ Suitable for heavy-duty gears and worm wheels

Common Applications

- + Bearings
- + Gear boxes
- + Gears
- + Pump components
- + Valve bodies
- + Worm gears
- + Worm wheels

Comparative Specifications

BS1400-PB1; AS1565 90710;
SAE 65; JIS H5113 – PBC2C;
DIN 1705 – G-CuSn10;
ISO 1338 – CuSn10P;
BS EN 19 82:1999 – CuSn11P

Overview

PB1 Phosphor Bronze is a high strength material that is often referred to as ‘gear bronze’. Components that are machined from PB1 are exceptionally durable in applications where high working loads and speeds are encountered, provided that there are good alignment and adequate lubrication. PB1 has good machining properties and good corrosion resistance to seawater and brine, making it suitable for pump and valve components.

All Kormax PB1 Phosphor Bronze is manufactured using finely controlled continuous or centrifugal casting techniques to ensure that hardness and strength are superior to sand-casting methods. It also means that the material has a fine grain structure and is free from porosity.

Material Profile

	Profile	Metric Size Range	Imperial Size Range	Availability
●	Solid Round	12.7 - 254mm	1/2 - 10"	In Stock
○	Hollow Round	44.45 - 203mm	1 3/4 - 8"	In Stock
Other sizes and custom profiles available upon request				

Chemical Composition

Element	Symbol	Range %	Nominal %
Tin	Sn	10.0-11.0	10.5
Lead	Pb	0.25 maximum	
Zinc	Zn	0.05 maximum	
Nickel	Ni	0.10 maximum	
Iron	Fe	0.10 maximum	
Aluminium	Al	0.01 maximum	
Phosphorus	P	0.50-1.0	0.7
Copper	Cu	Balance	

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	276 N/mm2	40000 psi
Yield Strength Min	170 N/mm2	25000 psi
Elongation Min	10%	10%
Hardness Min	102 BHN	102 BHN

Machining Allowances

All Kormax PB1 Bronze bar has machining allowances added to the sizes quoted. To use 4-1/2" x 2-1/2" hollow bar as an example, this material would measure approximately 4.570" OD x 2.440" ID as supplied. It allows finished components measuring 4-1/2" OD x 2-1/2" ID to get easily manufactured from 4-1/2" x 2-1/2" hollow bar.

Machining allowances are as follows:

Solid Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
12.7mm	1/2"	1.64
19.05mm	3/4"	3
25.4mm	1"	5.12
31.8mm	1 1/4"	7.88
35mm	1 3/8"	9.49
38.1mm	1 1/2"	11.13
44.45mm	1 3/4"	15.04
50.8mm	2"	19.53
57.15mm	2 1/4"	24.61
63.5mm	2 1/2"	30.28
70.0mm	2 3/4"	36.02 >

Hollow Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
44.45 x 25.4mm	1 3/4" x 1"	11.05
50.8 x 25.4mm	2" x 1"	15.54
50.8 x 31.75mm	2" x 1 1/4"	13.08
50.8 x 38.1mm	2" x 1 1/2"	10.12
63.5 x 25.4mm	2 1/2" x 1"	26.29
63.5 x 38.1mm	2 1/2" x 1 1/2"	20.78
63.5 x 44.45mm	2 1/2" x 1 3/4"	17.14
76.2 x 25.4mm	3" x 1"	38.83
76.2 x 38.1mm	3" x 1 1/2"	33.4
76.2 x 50.8mm	3" x 2"	26.01
82.55 x 31.75mm	3 1/4" x 1 1/4"	44.35
82.55 x 63.5mm	3 1/4" x 2 1/2"	25.3
88.9 x 50.8mm	3 1/2" x 2"	42.15
88.9 x 63.5mm	3 1/2" x 2 1/2"	32.88
88.9 x 69.85mm	3 1/2" x 2 3/4"	26.2
101.6 x 25.4mm	4" x 1"	72.02
101.6 x 38.1mm	4" x 1 1/2"	66.64
102 x 51mm	4" x 2"	59.54 >

Outside Diameter		Inside Diameter	
Size Range	Allowance	Size Range	Allowance
up to 3-3/4"	+0.040"	up to 3-3/4"	-0.060"
4" to 5"	+0.070"	4" to 5"	-0.090"
5-1/4" to 6"	+0.094"	5-1/4" to 6"	-0.108"
6-1/4" to 20"	+0.109"	6-1/4" to 18"	-0.120"

Metric Sizes	Imperial Sizes	Kg/MTR
76.2mm	3"	42.76
82.55mm	3 1/4"	50.08
88.9mm	3 1/2"	57.98
101.6mm	4"	75.91
114.3mm	4 1/2"	95.7
127.0mm	5"	116.65
152.4mm	6"	168.52
178mm	7"	229.34
203.2mm	8"	298.39
254mm	10"	463.74 .

Metric Sizes	Imperial Sizes	Kg/MTR
101.6 x 63.5mm	4" x 2 1/2"	49.48
102 x 76mm	4" x 3"	37.1
107.95 x 76.2mm	4 1/4" x 3"	46.81
114.3 x 50.8mm	4 1/2" x 2"	78.77
114.3 x 63.5mm	4 1/2" x 2 1/2"	68.81
114.3 x 88.9mm	4 1/2" x 3 1/2"	42.41
127 x 50.8mm	5" x 2"	100.85
127 x 76.2mm	5" x 3"	78.64
127 x 88.9mm	5" x 3 1/2"	64.1
127 x 101.6mm	5" x 4"	48.8
152.4 x 50.8mm	6" x 2"	151.76
152.4 x 76.2mm	6" x 3"	129.76
152.4 x 101.6mm	6" x 4"	100.73
165.1 x 127mm	6 1/2" x 5"	90.45
190.5 x 101.6mm	7 1/2" x 4"	193.98
190.5 x 127mm	7 1/2" x 5"	154.1
190.5 x 152.4mm	7 1/2" x 6"	107.19
203 x 152mm	8" x 6"	142.86 .

C51900 Bronze Sheet

Key Features

- ★ Material with pleasing appearance, Maturely ages to brownish colour over-time.
- ★ High strength sheet properties Metal has longitudinal “grain” (not visible), folding should only be across the sheet.
- ★ Excellent fatigue resistance and is often used for springs.

Common Applications

- + Chemical Industries
- + Flexible Metal Hoses
- + Marine Components
- + Paper & pulp
- + Springs
- + Textile Industry

Comparative Specifications

UNS C51900, EN CW452K, JIS C5191

! Please note - we can offer other grades such as 863, 955, PB2, G1, LB2 etc on indent in diameters up to 4000mm

Overview

C51900 Bronze is a strengthened bronze with 6% tin. Its high tin content results in enduring strength and good spring properties. It is wear-resistant, corrosion resistance and can easily be soldered.

Material Profile

	Profile	Metric Values	Imperial Values	Availability
—	Sheet	0.2-5mm	0.008-0.197"	In Stock
Other sizes and custom profiles available upon request				

Chemical Composition

Element	Symbol	Range %	Nominal %
Tin	Sn	5.5 – 7.0	6.0
Zinc	Zn	Max 0.1	
Phosphorus	P	0.03-0.18	
Copper	Cu	Balance	

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	96 N/mm2	14000 psi
Yield Strength Min	88 N/mm2	13000 psi
Elongation Min	13%	13%
Hardness Min	72 BHN	72 BHN

Sheet

Metric Sizes	Kg/MTR
0.2mm	1.77
0.3mm	2.66
0.5mm	4.42
0.6mm	5.30
0.8mm	7.07
1.0mm	8.84
1.2mm	10.61
1.5mm	13.26
2.0mm	17.68
3.0mm	26.52
5.0mm	44.20

729 Copper Nickel Tin

Key Features

- ★ Exceptionally high strength and hardness
- ★ A low coefficient of friction
- ★ Great wear resistance
- ★ Freedom from galling
- ★ Great corrosion resistance
- ★ Excellent machinability
- ★ No lead (pb)

Common Applications

- + Bushings & plain bearings
- + Chemical processing equipment
- + Marine components
- + Oil refinery components
- + Sea water flanges & impellers
- + Steam fittings

Comparative Specifications

C72900, similar composition to C96900 HT

Solid and hollow available in a variety of sizes up to 13-1/2

Overview

Copper Nickel 729 is a high strength Copper Nickel Tin Alloy cast, hot work heat-treated to 930 MPA.

It is an exceptionally hard material with outstanding strength, high wear resistance, low friction and good machining properties. Copper Nickel 729 is regarded as the world's best bearing material due to its unique physical properties and galling resistance. When used correctly it eliminates warranty bearing, increases reliability and increases load capacity.

Copper Nickel 729 is engineered to provide attributes beyond those typically found in high-strength copper alloys, especially in the high temperature, high-pressure regime. Copper Nickel 729 material retains its strength at elevated temperatures and resists most acidic environments. Some tempers of Copper Nickel 729 combine high levels of fracture toughness with strength.

Material Profile

	Profile	Imperial Size Range	Availability
●	Solid Round	up to 13 1/2	2-4 weeks
○	Hollow Round	up to 13 1/2	2-4 weeks
Other sizes and custom profiles available upon request			

Chemical Composition

Element	Symbol	Range %	Nominal %
Nickel	Ni	14.5-15.5	15.0
Tin	Sn	7.5-8.5	8.0
Iron	Fe	0.50 maximum	
Magnesium	Mg	0.30 maximum	
Cobalt	Co	0.10 maximum	
Niobium	Nb	0.5 maximum	
Silicon	Si	0.5 maximum	
Manganese	Manganese	0.3 maximum	
Copper	Cu	Balance	

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	862 N/mm2	125000 psi
Yield Strength Min	758 N/mm2	110000 psi
Elongation Min	6%	6%
Hardness Min	285 BHN	285 BHN

Sintered Bronze



Key Features

- ★ Self-lubricating
- ★ Superior wear resistance
- ★ Long part life
- ★ Suitable for higher speeds (up to 5 m/s)

Common Applications

- + Domestic appliances
- + FHP motor bearings
- + Hand tools

! Please refer to page 112 to view range of Sintered Bronze bushes

Overview

Kormax carries a comprehensive range of sintered bronze in both solid and hollow bars. Other shapes such as thrust washers, flanged bushes and flat plates are available by indent, and solid and hollow round bar up to 8” diameter.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
● Solid Round	19-50mm		In Stock
○ Hollow Round	16-38mm		In Stock

Other sizes and custom profiles available upon request

Solid Bar



Outside Ø	Length	Code
19mm	70mm	SOB1970
19mm	165mm	SOB19165
22mm	165mm	SOB225165
25mm	70mm	SOB2570
25mm	165mm	SOB25165
31mm	70mm	SOB3170
Outside Ø	Length	Code
31mm	165mm	SOB31165
38mm	165mm	SOB38165
44mm	165mm	SOB44165
50mm	76mm	SOB5076
50mm	165mm	SOB50165

Hollow Bar



Inside Ø	Outside Ø	Length	Code
16mm	44mm	165mm	HOB1644165
25mm	50mm	165mm	HOB2550165
38mm	76mm	165mm	HOB3876165



Aluminium

Aluminium is a silvery-white, non-magnetic, ductile, soft, metal. It is a chemical element in the boron group. Structural components made from Aluminium are vital to the transportation, aerospace and construction sectors due to its low density and corrosion resistant properties.

13
Al
Aluminium
26.982

Aluminium is a silvery white, non-magnetic, ductile, soft, metal. It is a chemical element in the boron group.

Aluminium is the **most abundant metal in the world.**



It is the third most common element in the earth's crust, making up around **8%** of it.

Pure aluminium is extremely rare. It is so chemically reactive that native specimens are limited to extreme reducing environments. Instead, it is found combined in over 270 different minerals.

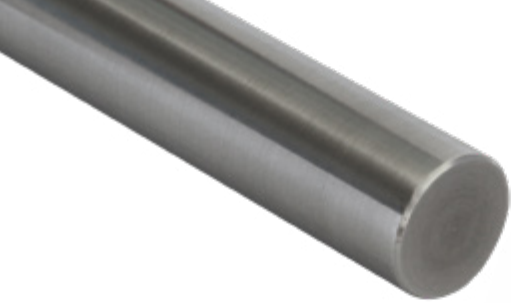
Aluminium was first produced in an impure form by Danish physicist Hans Christian Orsted in **1825**



Structural components made from aluminium are vital to the **transportation, aerospace and construction** sectors due to its **low density and corrosion resistant properties**

Aluminium

32 6061 Aluminium



6061 Aluminium

Key Features

- ★ Medium to high strength alloy
- ★ Excellent corrosion resistance
- ★ Economical & suited to a wide range of applications
- ★ Good weldability

Common Applications

- + Automotive components
- + Aviation parts
- + Couplings and valves
- + Electrical fittings
- + Food processing
- + Health equipment
- + Marine parts
- + Tank fittings

! Please note - we can also offer other common grades of aluminium such as 2011, 5083, 6082 & 7075

Machining Allowances

Round		
Size Range	Tolerance (mm)	Tolerance (inch)
up to 5/8"	+/-0.22	+/-0.009
3/4"	+/-0.25	+/-0.010
1" to 1-1/2"	+/-0.30	+/-0.012
1-3/4"	+/-0.35	+/-0.014
2" to 2-1/2"	+/-0.40	+/-0.016
3"	+/-0.45	+/-0.018
3-1/2"	+/-0.55	+/-0.022
4" to 4-1/2"	+/-0.65	+/-0.026
5"	+/-0.80	+/-0.031
6" to 7"	+/-1.00	+/-0.040
8"	+/-1.15	+/-0.045
9" to 10"	+/-1.30	+/-0.051

Overview:

Aluminium Alloy 6061 is a medium to high strength heat-treatable alloy. It has excellent corrosion resistance to atmospheric conditions and excellent weldability, although reduced power in the weld zone. It has medium fatigue strength and is widely available.

Material Profile

	Profile	Metric Size Range	Imperial Size Range	Availability
▬	Flat Bar	305 x 102mm	2-16 3/4"	In Stock
■	Square Bar	178.6mm	3/4-7"	In Stock
●	Solid Round	320mm	1/2-12 3/5"	In Stock
Other sizes and custom profiles available upon request				

Chemical Composition

Element	Symbol	Range %
Aluminium	Al	Balance
Magnesium	Mg	0.8 – 1.2
Silicon	Si	0.4-0.8
Copper	Cu	0.15-0.4
Chromium	Cr	0.04 – 0.35
Iron	Fe	0.7 max
Zinc	Zn	0.25 max
Manganese	Mn	0.15 max
Titanium	Ti	0.15 max
Others		0.15 max

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	310 N/mm2	45000 psi
Yield Strength Min	276 N/mm2	40000 psi
Elongation Min	12%	12%
Hardness Min	95 BHN	95 BHN

Flat Bar

Metric Sizes, mm	Tolerances, mm	Imperial Sizes	Kg/MTR
50x6	+/-0.2		0.81
80x6	+/-0.2		1.3
100x6	+/-0.2		1.62
305x8	+/-0.4		6.59
50x10	+/-0.2		1.35
60x10	+/-0.2		1.62
100x10	+/-0.2		2.7
150x10	+/-0.2		4.05
380x10	+/-0.4		10.26
50x12	+/-0.25		1.62
100x12	+/-0.25		3.24
150x12	+/-0.25		4.86
200x12	+/-0.25		6.48
76.2x12.7	+/-0.25	3" x 1/2"	2.62
254x12.7	+/-0.45	10" x 1/2"	8.71
305x14	+/-0.45		11.53
76x15	+/-0.25	3" x 3/5"	3.08
100.3x16	+/-0.25		4.34
305x16	+/-0.45		13.18
305x18	+/-0.45		14.83
50x20	+/-0.25		2.7
80x20	+/-0.25		4.32
100x20	+/-0.25		5.4
320x20	+/-0.45		17.28
350x22.5	+/-0.45		21.27
100x25	+/-0.3		6.75
150x25	+/-0.3		10.13
425x25	+/-0.5		28.69
50.8 x 25.4	+/-0.3	2" x 1"	3.49
63.5x25.4	+/-0.3	2 1/2" x 1"	4.36
76.2x25.4	+/-0.3	3" x 1"	5.23
351x30.5	+/-0.5		28.91 >

Square Bar

Metric Sizes	Tolerances, mm	Imperial Sizes	Kg/MTR
19.05mm	+/-0.25	3/4"	0.98
25.4mm	+/-0.3	1"	1.75
31.8mm	+/-0.3	1 1/4"	2.73
38.1mm	+/-0.3	1 1/2"	3.92
50.0mm	+/-0.6	2"	6.75
50.8mm	+/-0.6	2"	6.97 >

Metric Sizes, mm	Tolerances, mm	Imperial Sizes	Kg/MTR
63.5x31.8	+/-0.3	2 1/2" x 1 1/4"	5.45
76.2x31.8	+/-0.3	3" x 1 1/4"	6.54
152.4x31.8	+/-0.3	6" x 1 1/4"	13.07
101.6x32	+/-0.3		8.78
170x32	+/-0.3		14.69
300x36	+/-0.5		29.16
76.2x38.1	+/-0.3	3" x 1 1/2"	7.84
101.6x40	+/-0.4		10.98
200x40	+/-0.4		21.6
232x42	+/-0.4		26.31
160x45	+/-0.4		19.44
304x50	+/-0.9	12" x 2"	41.04
76.2x50.8	+/-0.6	3" x 2"	10.46
101.6x50.8	+/-0.6	4" x 2"	13.94
152.4x50.8	+/-0.6	6" x 2"	20.91
254x50.8	+/-0.9	10" x 2"	34.84
200x55	+/-0.6		29.7
100x60	+/-0.6		16.2
76.2x63.5	+/-0.6	3" x 2 1/2"	13.07
130x65	+/-0.6		22.82
330x70	+/-0.9		62.37
101.6x76.2	+/-0.6	4" x 3"	20.91
152.4x76.2	+/-0.6	6" x 3"	31.36
215x76.2	+/-0.6		44.24
240x90	+/-0.9		58.32
127x101.6	+/-0.9	5" x 4"	34.84
152.4x101.6	+/-0.9	6" x 4"	41.81
203.2x101.6	+/-0.9	8" x 4"	55.75
304.8x101.6	+/-1.1	12" x 4"	83.62
305x102	+/-1.1		83.62
230x112	+/-1.1		69.56
235x152	+/-1.1		96.45 .

Solid Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
12.7mm	1/2"	0.34
15.9mm	5/8"	0.54
19.05mm	3/4"	0.77
20.0mm		0.85
25.4mm	1"	1.37
31.8mm	1 1/4"	2.14
38.1mm	1 1/2"	3.08
44.45mm	1 3/4"	4.19
50.8mm	2"	5.47
57.15mm	2 1/4"	6.93
60.0mm		7.64
63.5mm	2 1/2"	8.55
70.0mm		10.39
76.2mm	3"	12.32
82.55mm	3 1/4"	14.45
88.9mm	3 1/2"	16.76

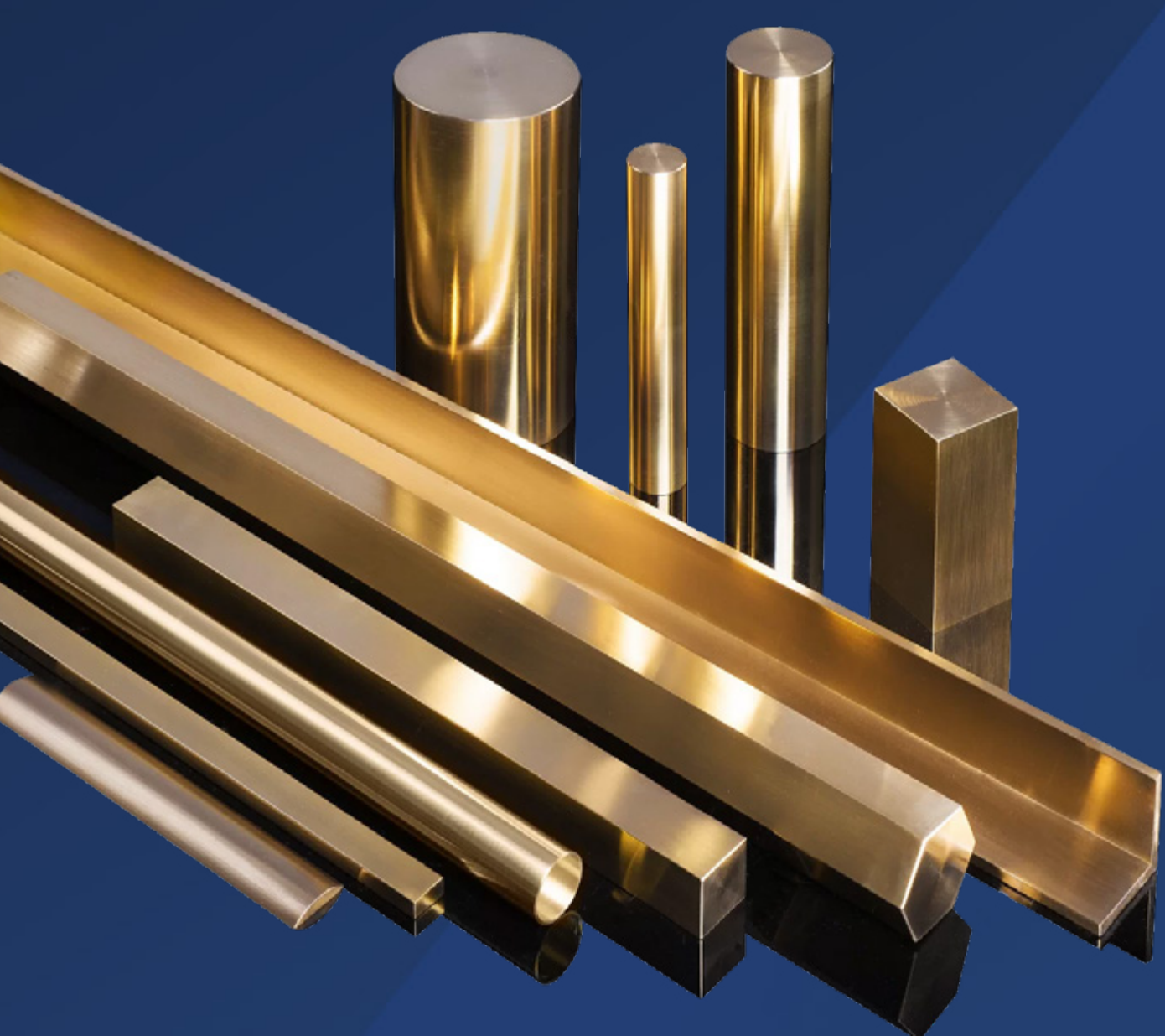
Metric Sizes	Imperial Sizes	Kg/MTR
95.3mm	3 3/4"	19.24
101.6mm	4"	21.89
114.3mm	4 1/2"	27.71
127.0mm	5"	34.21
139.7mm	5 1/2"	41.39
152.4mm	6"	49.26
165.1mm	6 1/2"	57.8
178mm	7"	67.04
190.5mm	7 1/2"	76.96
203.2mm	8"	87.56
215.9mm	8 1/2"	98.85
228.6mm	9"	110.82
254mm	10"	136.82
284mm		171.04
320mm		217.15



Brass

Kormax offers a range of Brass extruded alloys in various profiles. Brass is a bright yellowy gold metal consisting mainly of copper and zinc. The copper content is usually in the range of 55-70%. The addition of zinc to copper results in increased strength and hardness compared to unalloyed copper.

Brass is a highly machinable, formable and corrosion-resistant metal. They are commonly used for plumbing fittings, architectural hardware, fasteners and many more machined parts.



55-70% copper

Brass is a bright yellowy gold metal consisting mainly of copper and zinc. The copper content is usually in the range of 55-70%

Increased strength and hardness

The addition of zinc to copper results in a metal of increased strength and hardness when compared to unalloyed copper.



Brass is a highly machinable, formable and corrosion resistant metal. Commonly used for plumbing fittings, architectural hardware, fasteners and many more machined parts.

The earliest brass, called calamine brass, dates to Neolithic times. It was probably made by reduction of mixtures of zinc ores and copper ores.

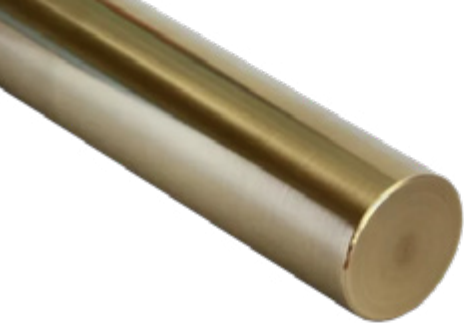
The malleability and traditionally attributed acoustic properties of brass have made it the metal of choice for

musical instruments.



Brass

38	385 Brass
41	260 Brass Sheet



385 Brass

Key Features

- ★ Superior machining characteristics
- ★ Long tooling life
- ★ Ideal for architectural applications

Common Applications

- + Architecture
- + Brass fasteners
- + Electrical parts
- + Hinges & locks
- + Pins
- + Roof flashings
- + Washers

Comparative Specifications

BS2874 – CZ121-4Pb;
EN 12449 – CuZn39Pb3 (CW614N)

Machining Allowances

● Round		
Size Range	Tolerance (mm)	Tolerance (inch)
up to 5/16	0.08	0.003
1" to 1-3/8"	0.10	0.004
1-1/2" to 1-3/4"	0.13	0.005
2" to 2-3/4"	0.15	0.006
3" +	0.30	0.012

● Hex		
Size Range	Tolerance (mm)	Tolerance (inch)
up to 7/8	0.00/0.13	0.000/0.005
15/16" to 1-1/4"	0.00/0.20	0.000/0.008
1-3/8" to 1-1/2"	0.00/0.30	0.000/0.012
1-3/4"	0.00/0.38	0.000/0.014

Overview

Kormax 385 brass comes in a range of bars, tubes, and rounds – including angle bars. Great for architectural and tooling usage, this metal is closely monitored throughout its extrusion to ensure the material is always up to the highest specifications.

385 has been developed for maximum output and most extended tool life essential on high-speed automatics. All extrusions are manu-factured from continuous cast billet stock ensuring uniform dispersion of lead particles and freedom from porosity. Alloy 385 is susceptible to dezincification under certain conditions and classified as a category III alloy.

Kormax brass sheets, rods, and pipes can be custom cut to ensure that they are sizes what you need.

Material Profile

	Profile	Metric Size Range	Imperial Size Range	Availability
●	Solid Round	3.18-152.4mm	1/8-6"	In stock
■	Flat Bar	3.17-25.4	1/8-1"	In Stock
■	Square Bar	6.35-50.8mm	1/4-2"	In Stock
⬡	Hex Bar	9.52-63.5mm	3/8-2 1/2"	In Stock
⤿	Half Round	4.76 x 25.4mm	1/5 x 1"	In Stock
⤿	Angle Bar	1.58-6.35mm	1/16-1/4"	In Stock
Other sizes and custom profiles available upon request				

Chemical Composition

Element	Symbol	Range %	Nominal %
Copper	Cu	56.0-60.0	58
Lead	Pb	2.5-4.5	3.5
Zinc	Zn	Balance	Balance

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	400 N/mm2	58000 psi
Yield Strength Min	200 N/mm2	29000 psi
Elongation Min	20%	20%
Hardness Min	135 BHN	135 BHN

Solid Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
3.18mm	1/8"	0.07
5mm	3/16"	0.17
6.35mm	1/4"	0.27
7.93mm	5/16"	0.42
9.53mm	3/8"	0.6
10mm	2/5"	0.67
11.11mm	7/16"	0.82
12mm	1/2"	0.96
12.7mm	1/2"	1.07
14.28mm	9/16"	1.36
15.9mm	5/8"	1.68
17.46mm	11/16"	2.03
19.05mm	3/4"	2.42
20.63mm	13/16"	2.83
22.22mm	7/8"	3.29
23.81mm	15/16"	3.77
25.4mm	1"	4.29
28.57mm	1 1/8"	5.43 >

Flat Bar

Metric Sizes	Imperial Sizes	Kg/MTR
3.17 x 12.7mm	1/8" x 1/2"	0.34
3.17 x 19.05mm	1/8" x 3/4"	0.51
3.17 x 25.4mm	1/8" x 1"	0.68
3.17 x 31.75mm	1/8" x 1 1/4"	0.85
3.17 x 38.1mm	1/8" x 1 1/2"	1.02
3.17 x 50.8mm	1/8" x 2"	1.37
3.17 x 76.2mm	1/8" x 3"	2.05
3.17 x 101.6mm	1/8" x 4"	2.73
3.17 x 15.87mm	1/8" x 5/8"	0.43
4.76 x 12.7mm	3/16" x 1/2"	0.51
4.76 x 25.4mm	3/16" x 1"	1.02
4.76 x 31.75mm	3/16" x 1 1/4"	1.28
4.76 x 50.8mm	3/16" x 2"	2.05
4.76 x 76.2mm	3/16" x 3"	3.08
6.35 x 12.7mm	1/4" x 1/2"	0.68
6.35 x 19.05mm	1/4" x 3/4"	1.02
6.35 x 25.4mm	1/4" x 1"	1.36
6.35 x 31.75mm	1/4" x 1 1/4"	1.7
6.35 x 38.1mm	1/4" x 1 1/2"	2.04
6.35 x 50.8mm	1/4" x 2"	2.74
6.35 x 63.5mm	1/4" x 2 1/2"	3.4
6.35 x 76.2mm	1/4" x 3"	4.09 >

Metric Sizes	Imperial Sizes	Kg/MTR
30.16mm	1 3/16"	6.06
31.8mm	1 1/4"	6.71
35mm	1 3/8"	8.11
38.1mm	1 1/2"	9.66
41.28mm	1 5/8"	11.33
44.45mm	1 3/4"	13.14
50.8mm	2"	17.17
57.15mm	2 1/4"	21.73
63.5mm	2 1/2"	26.85
70.0mm	2 3/4"	32.46
76.2mm	3"	38.66
82.55mm	3 1/4"	45.33
88.9mm	3 1/2"	52.62
95.3mm	3 3/4"	60.35
101.6mm	4"	68.72
127.0mm	5"	108
152.4mm	6"	156 .

Metric Sizes	Imperial Sizes	Kg/MTR
6.35 x 101.6mm	1/4" x 4"	5.45
6.35 x 152.4mm	1/4" x 6"	8.18
9.52 x 19.05mm	3/8" x 3/4"	1.54
9.52 x 25.4mm	3/8" x 1"	2.05
9.52 x 31.75mm	3/8" x 1 1/4"	2.56
9.52 x 38.1mm	3/8" x 1 1/2"	3.07
9.52 x 50.8mm	3/8" x 2"	4.9
9.52 x 76.2mm	3/8" x 3"	6.15
9.52 x 152.4mm	3/8" x 6"	12.3
12.7 x 25.4mm	1/2" x 1"	2.73
12.7 x 38.1mm	1/2" x 1 1/2"	4.1
12.7 x 50.8mm	1/2" x 2"	5.46
12.7 x 76.2mm	1/2" x 3"	8.19
12.7 x 101.6mm	1/2" x 4"	10.92
12.7 x 152.4mm	1/2" x 6"	16.38
15.87 x 31.75mm	5/8" x 1 1/4"	4.27
15.87 x 50.8mm	5/8" x 2"	6.83
19.05 x 38.1mm	3/4" x 1 1/2"	6.15
19.05 x 76.2mm	3/4" x 3"	12.3
25.4 x 76.2mm	1" x 3"	16.38
25.4 x 101.6mm	1" x 4"	21.84 .

Square Bar

Metric Sizes	Imperial Sizes	Kg/MTR
6.35mm	1/4"	0.34
7.95mm	5/16"	0.53
9.52mm	3/8"	0.77
12.7mm	1/2"	1.37
15.9mm	5/8"	2.13
19.05mm	3/4"	3.07
22.23mm	7/8"	4.19
25.4mm	1"	5.46
31.8mm	1 1/4"	8.54
38.1mm	1 1/2"	12.34
50.8mm	2"	21.86



Half Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
4.76 x 25.4mm	3/16" x 1"	0.75



Hex Bar

Metric Sizes	Imperial Sizes	Kg/MTR
9.52mm	3/8"	0.67
11.11mm	7/16"	0.91
12.7mm	1/2"	1.18
14.28mm	9/16"	1.5
15.9mm	5/8"	1.85
19.05mm	3/4"	2.66
22.22mm	7/8"	3.62
23.81mm	15/16"	4.16
25.4mm	1"	4.73
26.98mm	1 1/16"	5.34
28.57mm	1 1/8"	5.99
31.8mm	1 1/4"	7.42
35mm	1 3/8"	8.95
38.1mm	1 1/2"	10.65
44.45mm	1 3/4"	14.52
50.8mm	2"	18.93
63.5mm	2 1/2"	29.57



Angle Bar

Metric Sizes	Imperial Sizes	Kg/MTR
1.58 x 12.7 x 12.7mm	1/16" x 1/2" x 1/2"	0.32
3.17 x 19.05 x 19.05mm	1/8" x 3/4" x 3/4"	0.94
3.17 x 25.4 x 25.4mm	1/8" x 1" x 1"	1.28
3.17 x 31.75 x 31.75mm	1/8" x 1 1/4" x 1 1/4"	1.63
3.17 x 38.1 x 38.1mm	1/8" x 1 1/2" x 1 1/2"	1.97
3.17 x 50.8 x 50.8mm	1/8" x 2" x 2"	2.65
6.35 x 50.8 x 50.8mm	1/4" x 2" x 2"	5.12



260 Brass Sheet

Brass

Key Features

- ★ The best brass for architectural applications
- ★ Beautiful finishing aesthetic
- ★ Extremely ductile

Common Applications

- + Architecture
- + Electrical parts

Comparative Specifications

C26000 B927/B927M, J461/J463

Chemical Composition

Element	Symbol	Range %
Copper	Cu	68.5-71.5
Lead	Pb	0.07 max
Iron	Fe	0.05 max
Zinc	Zn	Balance

Overview

C26000 brass sheets are ideal for engineering and finishing uses and can be custom cut to your specifications. These premium brass sheets are widely used in the manufacturing of architectural products and are available in a polished or plain finish.

Material Profile

Profile	Metric Values	Imperial Values	Availability
— Sheet	0.5-6mm	5/256-1/4"	In Stock
— Polished Sheet	0.8-1.6mm	1/32-1/16"	In Stock

Other sizes and custom profiles available upon request

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	345 N/mm2	50000 psi
Yield Strength Min	205 N/mm2	30000 psi
Elongation Min	20%	20%
Hardness Min	93 BHN	93 BHN

Sheet



Metric
0.5mm
0.6mm
0.8mm
1.0mm
1.2mm
1.6mm
2.0mm
3.0mm
5.0mm
6.0mm

Polished Sheet



Metric
0.8mm
1.0mm
1.2mm
1.6mm

Copper

Copper is highly formable, corrosion-resistant with high conductivity.

Today copper is the third most commonly used metal in the world, following Iron and Aluminium. Copper was favoured in early times for its formability and corrosion resistance. These attributes are still valued, but it is copper's thermal and electrical conductivity that makes it so widely used today.

29

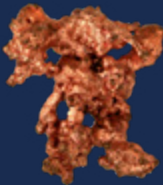
Cu

Copper
63.546

Copper is a naturally occurring soft, malleable metal.

Copper was the first metal to be used widely by man, over **5,000 years ago.**

Copper has a reddish, orange lustre. Gold is the only other naturally occurring metal that has a colour other than white or grey.



Today Copper is the **third most commonly used metal** in the world, following Iron and Aluminium.



Copper was favoured in early times for it's formability and corrosion resistance. These attributes are still valued, but it is copper's

thermal and electrical conductivity that makes it so widely used today.

Copper

44 110 Copper

110 Copper

Key Features

- ★ High conductivity electrical copper
- ★ Ductile and highly formable
- ★ Corrosion resistant
- ★ Pleasing appearance
- ★ Weather-resistant

Common Applications

- + Architecture fittings & trimmings
- + Busbar
- + Conductors
- + Gaskets
- + Heat exchangers
- + Radiators
- + Roof flashings
- + Terminals

Overview

110 Copper is a high purity material consisting of no less than 99.9% copper. Sometimes C11000 is also referred to as electrolytic tough pitch or ETP Copper. A closely controlled extrusion process manufactures all Kormax C11000 Copper to ensure maximum electrical conductivity and formability.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
● Solid Round	7.93-102mm	1/3-4"	In Stock
■ Flat Bar	3.17-19.05mm	1/8-3/4"	In Stock
■ Square Bar	25.4mm	1"	2-4 weeks

Other sizes and custom profiles available upon request

Chemical Composition

Element	Symbol	Range %
Copper	Cu	99.9
Other		0.10 max

Machining Allowances

■ Flat/Square

Size Range	Tolerance, mm	Tolerance, inch
Thickness		
1/8" to 3/16"	+/-0.076	+/-0.003
1/4" to 1/2"	+/-0.102	+/-0.004
3/4"	+/-0.114	+/-0.0045
Width		
1" to 2"	+/-0.203	+/-0.008
2-1/4" to 4"	+/-0.305	+/-0.012
4-1/2"+	+/-0.457	+/-0.018

● Round

Size Range	Tolerance, mm	Tolerance, inch
1/4" to 1/2"	+/-0.038	+/-0.0015
5/8" to 1"	+/-0.051	+/-0.002
1-1/4" to 2"	+/-0.064	+/-0.0025
2-1/2"	+/-0.102	+/-0.004
3"	+/-0.127	+/-0.005
4"	+/-0.152	+/-0.006

Solid Round Bar

Metric Sizes	Imperial Sizes	Kg/MTR
7.93mm	7/16"	0.44
9.52mm	3/8"	0.64
12.7mm	1/2"	1.13
15.9mm	5/8"	1.77
19.05mm	3/4"	2.55
22.22mm	7/8"	3.47
25.4mm	1"	4.53
31.8mm	1 1/4"	7.08
38.1mm	1 1/2"	10.19
44.45mm	1 3/4"	13.87
50.8mm	2"	18.12
57.15mm	2 1/4"	22.93
63.5mm	2 1/2"	28.47
76.2mm	3"	40.78
102mm	4"	72.88

Square Bar

Metric Sizes	Imperial Sizes	Kg/MTR
25.4mm	1"	5.77

Flat Bar

Metric Sizes	Imperial Sizes	Kg/MTR
3.17 x 25.4mm	1/8" x 1"	0.72
4.76 x 25.4mm	1/5" x 1"	1.08
4.76 x 50.8mm	1/5" x 2"	2.16
6 x 40mm		2.09
6.35 x 25.4mm	1/4" x 1"	1.44
6.35 x 38.1mm	1/4" x 1 1/2"	2.16
6.35 x 50.8mm	1/4" x 2"	2.88
6.35 x 76.2mm	1/4" x 3"	4.32
6.35 x 101.6mm	1/4" x 4"	5.76
10 x 20mm		1.79
10 x 30mm		2.68
10 x 40mm		3.57
10 x 50mm		4.47
10 x 60mm		5.36
10 x 80mm		7.15
10 x 100mm		8.94
12.7 x 152.4mm	1/2" x 6"	17.28
19.05 x 101.6mm	3/4" x 4"	17.28



Cast Iron

Kormax Continuous Cast iron bar is manufactured in grey cast iron (GJL) and ductile cast iron (GJS, also known as SG, nodular or spheroidal graphite cast iron).

Silver Steel

Kormax offers a precision ground silver steel, a high carbon bright steel ground to very tight tolerances, with extensive application in general engineering and tool room.

Titanium

Titanium grades exhibit various outstanding properties, including low specific gravity, high corrosive resistance, biocompatibility, high specific strength, and nonmagnetic properties.

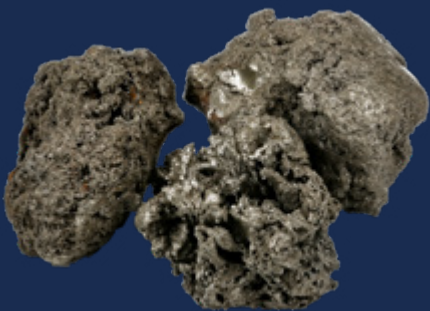
Inconel®

Nickel-chromium alloys offered by Kormax are speciality alloys materials with exceptional corrosion resistance and high strength that are efficiently used for higher temperature applications.



Cast Iron was the first major structural metal used in some early skyscrapers due to its excellent load-bearing ability.

Silver steel is sometimes referred to as **Tool Steel (UK)** or **Drill Rod (USA)**. Supplied as a centreless round bar in annealed (soft) form. It is easily worked into shape then hardened for uses such as punches, shafts, pins and more.



Titanium is the ninth-most abundant element in Earth's crust, roughly around 0.63%, and the seventh-most abundant metal.



Inconel is often encountered in extreme environments in aerospace, automotive, tokamak. Tesla, SpaceX, Jaguar, BMW

Other Metals

48	3D Ductile Cast Iron
49	4E Cast Iron
50	Silver Steel
52	Titanium Grade 5
54	INCONEL® Alloy 718

3D Ductile Cast Iron

Key Features

- ★ High strength & resistant to impact
- ★ Highly elastic & ductile
- ★ Excellent machining properties
- ★ High thermal & shock resistance

Common Applications

- + Heavy duty gears
- + Hydraulic cylinder components
- + Impellers
- + Pump bodies
- + Rotors
- + Sprockets
- + Spur gears
- + Worm gears

Chemical Composition

Element	Symbol	Range %
Carbon	C	3.55
Manganese	Mn	0.30
Silicon	Si	2.50
Nickel	Ni	0.03
Chromium	Cr	0.02
Molybdenum	Mo	0.01
Phosphorus	P	0.10
Sulfur	S	0.01
Magnesium	Mg	0.04
Copper	Cu	0.05
Iron	Fe	Balance

*FMS – Finished Machining Size

Overview

3D Cast Iron is ductile iron with a stock grade of 3D and is otherwise known as spheroidal graphite or nodular iron. The material is high strength ductile and more readily machined than other styles of cast iron. Its properties include being highly elastic and resistant to impact and suitable for thermal and mechanical shock applications.

Material Profile

Profile	Metric Size Range	Availability
● Solid Round	40-400mm	In Stock
Other sizes and custom profiles available upon request		

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	370 N/mm2	53600 psi
Yield Strength Min	–	–
Elongation Min	11%	11%
Hardness Min	120 BHN	120 BHN

Solid Round Bar

Metric Sizes	FMS*	Kg/MTR	Metric Sizes	FMS*	Kg/MTR
40mm	34mm	9.6	150mm	140mm	134.7
50mm	44mm	15.0	160mm	150mm	153.3
55mm	47mm	18.1	170mm	160mm	173.0
65mm	57mm	25.3	180mm	170mm	194.0
70mm	62mm	29.3	190mm	180mm	216.1
75mm	67mm	33.7	200mm	190mm	239.4
80mm	72mm	38.3	210mm	196mm	263.9
85mm	77mm	43.3	230mm	216mm	316.7
90mm	82mm	48.5	240mm	226mm	344.7
95mm	87mm	54.0	250mm	236mm	374.1
100mm	92mm	59.9	260mm	246mm	404.6
105mm	95mm	66.0	280mm	266mm	469.0
110mm	100mm	72.5	300mm	286mm	538.4
115mm	105mm	79.2	310mm	294mm	574.9
120mm	110mm	86.2	340mm	324mm	691.6
125mm	115mm	93.6	360mm	344mm	775.4
130mm	120mm	101.2	400mm	384mm	957.2
140mm	130mm	117.3			

4E Cast Iron

Key Features

- ★ Suitable for high-speed machining
- ★ Withstands high pressures without leaking
- ★ Low tensile strength & elongation

Common Applications

- + Distributor blocks
- + Hydraulic cylinder components
- + Pistons
- + Slide bearings

Chemical Composition

Element	Symbol	Range %
Carbon	C	3.35
Manganese	Mn	0.45
Silicon	Si	2.60
Nickel	Ni	0.08
Chromium	Cr	0.08
Molybdenum	Mo	0.01
Phosphorus	P	0.10
Sulfur	S	0.08
Magnesium	Mg	0.01
Copper	Cu	0.30
Iron	Fe	Balance

*FMS – Finished Machining Size

Overview

Kormax 4E Continuous Cast Iron bars consist of a uniform pearlitic structure from surface to core. A continuous cast iron bar has a fine grain structure combined with the fine graphite flake size and dense homogeneous structure. The material is well suited for high speed machining and is suitable in applications that demand the ability to withstand high pressures without leaking.

Material Profile

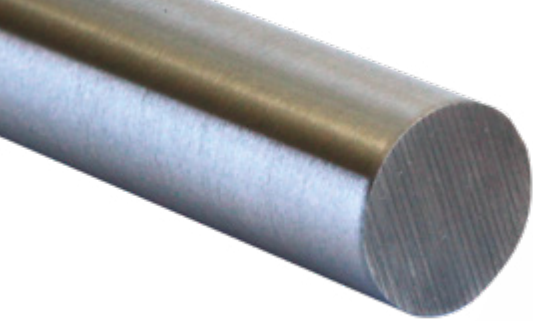
Profile	Metric Size Range	Availability
● Solid Round	40-400mm	In Stock
Other sizes and custom profiles available upon request		

Physical Properties

Material	Metric Values	Imperial Values
Tensile Strength Min	155 N/mm2	23000 psi
Yield Strength Min	–	–
Elongation Min	1%	1%
Hardness Min	170 BHN	170 BHN

Solid Round Bar

Metric Sizes	FMS*	Kg/MTR	Metric Sizes	FMS*	Kg/MTR
40mm	36mm	9.6	160mm	152mm	153.3
45mm	41mm	12.2	170mm	162mm	173.0
50mm	46mm	15.0	180mm	172mm	194.0
65mm	59mm	25.3	200mm	192mm	239.4
70mm	64mm	29.3	220mm	208mm	289.7
75mm	69mm	33.7	230mm	218mm	316.7
80mm	74mm	38.3	250mm	238mm	374.1
90mm	84mm	48.5	260mm	248mm	404.6
95mm	89mm	54.0	280mm	268mm	469.0
100mm	94mm	59.9	310mm	296mm	574.9
105mm	97mm	66.0	320mm	306mm	600.6
115mm	107mm	79.2	340mm	326mm	678.0
120mm	112mm	86.2	360mm	346mm	775.4
130mm	122mm	101.2	380mm	366mm	863.9
140mm	132mm	117.3	400mm	386mm	957.2
150mm	142mm	134.7			



Silver Steel

Common Applications

- + Injection moulding cores, pins, inserts & slides

Key Features

- ★ High strength & resistant to impact
- ★ Highly elastic & ductile
- ★ Excellent machining properties
- ★ High thermal & shock resistance

Machining Allowances

Size Range	Tolerance
up to 7/8"	+/-0.00025
1" to 2"	+/-0.0005
up to 24mm	+0.0/-0.015mm
25mm to 50mm	+0.0/-0.025mm

Tempering

Temp. Range	Hardness
150°C (302°F)	63/65 Rc
200°C (392°F)	60/62 Rc
250°C (482°F)	59/61 Rc
300°C (572°F)	55/57 Rc

Minimum 1 hour soak, immediately after hardening.

Technical Information

Approximate hardness (Brinell)	180-285
Approximate UTS (tons/in²)	40-60
Approximate yield point (tons/in²)	35-50
Approximate torsional stress (tons/in²)	22-33
Approximate shear stress (tons/in²)	24-36
Approximate elongation % (2" GL)	35-20
Approximate reduction of area %	45-30
Approximate density (g/cc)	7.83

Figures for guidance only, not part of a specification.

Overview

Kormax supply only genuine English made silver steel of the highest quality. Silver steel is a versatile high carbon tool steel that is ground to very close tolerances. It is so-called because of its highly polished appearance created by the excellent surface finish. The high carbon content of this BS1407 Silver Steel means that it can be hardened to give considerable wear resistance and the chromium content increases strength and hardenability. It is readily machinable as supplied in the spheroidised annealed condition.

Material Profile

Profile	Metric Size Range	Imperial Size Range	Availability
● Solid Round	2mm-38mm	1/8"-1"	In Stock
Other sizes and custom profiles available upon request			

Chemical Composition

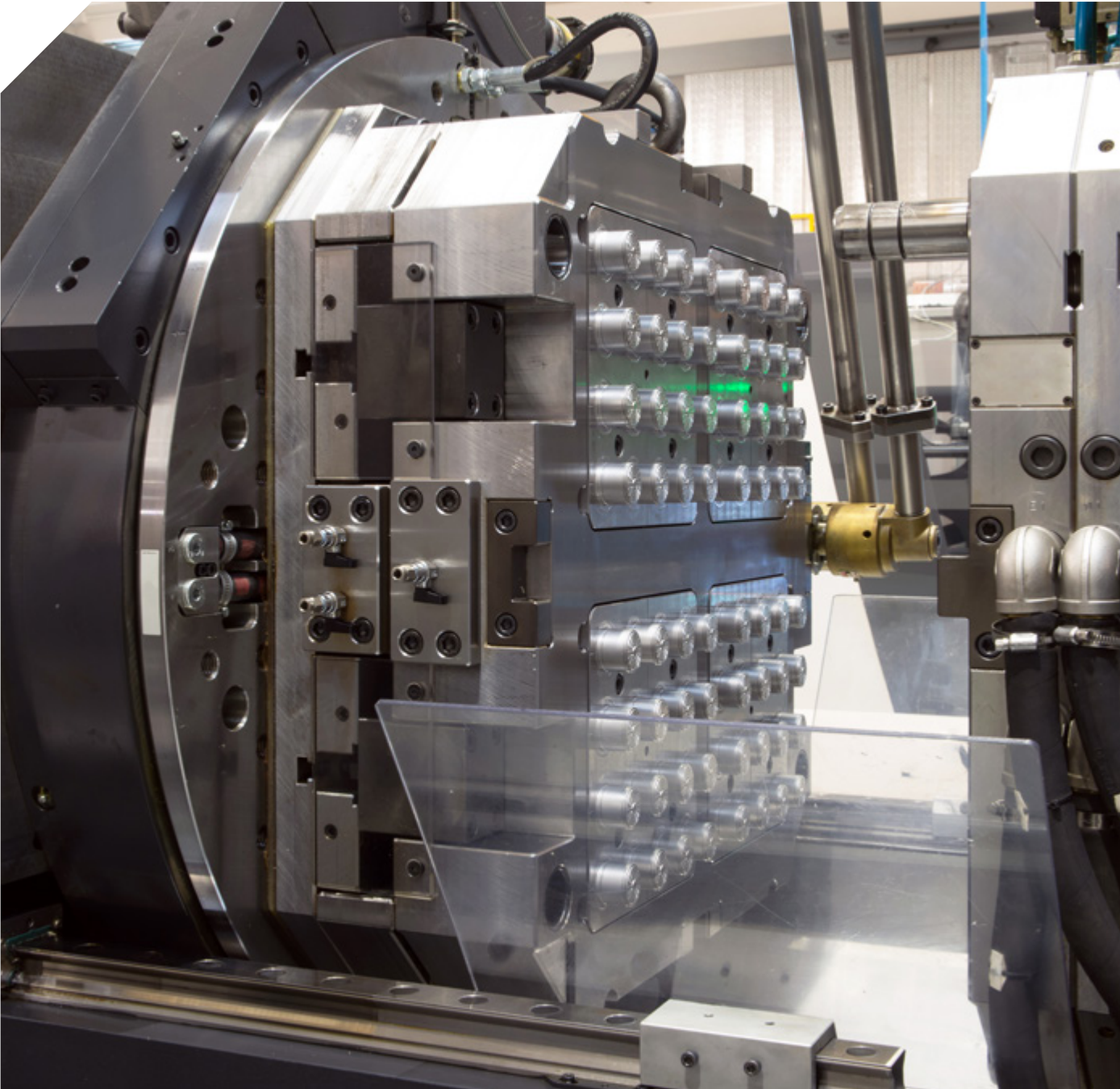
Element	Symbol	Range %	Nominal
Carbon	C	0.95-1.25	1.13
Silcon	Si	0.40 max	0.22
Chromium	Cr	0.35-0.45	0.43
Sulphur	S	0.045 max	0.018
Manganese	Mn	0.25-0.45	0.37
Phosphorus	P	0.045 max	0.014
Iron	Balance	Balance	

Solid Round Bar – Metric

Diameter	Length	Stock Code	Diameter	Length	Stock Code
2 mm	1000 mm	SISTM2	15 mm	1000 mm	SISTM15
3 mm	1000 mm	SISTM3	16 mm	1000 mm	SISTM16
4 mm	1000 mm	SISTM4	17 mm	1000 mm	SISTM17
5 mm	1000 mm	SISTM5	18 mm	1000 mm	SISTM18
6 mm	1000 mm	SISTM6	19 mm	1000 mm	SISTM19
7 mm	1000 mm	SISTM7	20 mm	1000 mm	SISTM20
8 mm	1000 mm	SISTM8	22 mm	1000 mm	SISTM22
9 mm	1000 mm	SISTM9	24 mm	1000 mm	SISTM24
10 mm	1000 mm	SISTM10	25 mm	1000 mm	SISTM25
11 mm	1000 mm	SISTM11	26 mm	1000 mm	SISTM26
12 mm	1000 mm	SISTM12	30 mm	1000 mm	SISTM30
13 mm	1000 mm	SISTM13	35 mm	1000 mm	SISTM35
14 mm	1000 mm	SISTM14	38 mm	1000 mm	SISTM38

Solid Round Bar – Imperial

Diameter	Length	Stock Code	Diameter	Length	Stock Code
1/8"	1000 mm	SISTI1/8	7/16"	1000 mm	SISTI7/16
3/16"	1000 mm	SISTI3/16	1/2"	1000 mm	SISTI1/2
7/32"	1000 mm	SISTI7/32	9/16"	1000 mm	SISTI9/16
1/4"	1000 mm	SISTI1/4	5/8"	1000 mm	SISTI5/8
9/32"	1000 mm	SISTI9/32	1-1/4"	1000 mm	SISTI1-1/4
5/16"	1000 mm	SISTI5/16	3/4"	1000 mm	SISTI3/4
11/32"	1000 mm	SISTI11/32	7/8"	1000 mm	SISTI7/8
3/8"	1000 mm	SISTI3/8	1"	1000 mm	SISTI1





Titanium Grade 5

Titanium-Aluminum-Vanadium alloy

Key Features

- ★ Entirely heat treatable
- ★ Good weldability
- ★ Excellent for structural application
- ★ Excellent machinability
- ★ Excellent corrosion resistance
- ★ Good mechanical strength

Common Applications

- + Medical equipment
- + Marine applications
- + Aircraft structural components
- + Offshore oil & gas equipment
- + High-performance automatic parts
- + Sports equipment
- + Aero-engine components
- + Valves and pumps
- + Motorsport components

Chemical Composition

Element	Symbol	Range %	Nominal %
Iron	Fe	0.25	
Aluminum	Al	5.5-6.76	6.13
Carbon	C	0.08	
Vanadium	V	3.5-4.5	4
Nitrogen	N ₂	0.05	
Titanium	Ti	Balanced*	
Oxygen	O ₂	0.2	
Hydrogen (For sheet)	H ₂	0.015	
Hydrogen (For billet)	H ₂	0.01	
Hydrogen (For bar)	H ₂	0.0125	

Overview

Titanium grade 5 (titanium-aluminum-vanadium alloy) is among the most widely used alpha-beta titanium alloys, comprising of 50% of total titanium used globally. One of the prominent properties of Titanium grade 5 is that it is entirely heat treatable, and can be used for the temperature up to 400°C. It combines low density (4.42 kg/dm) with outstanding corrosion resistance and good mechanical strength.

Titanium grade 5 has excellent tensile properties at room temperature and has a good creep resistance up to 300°C. It also exhibits excellent resistance against crack propagation and fatigue. The age-hardening ability of titanium grade 5 makes it a perfect choice for various applications, including fasteners and spring. It has a wide range of industrial applications due to its good machinability and weldability.

Material Profile

Profile	Metric Values	Imperial Values	Availability
● Round Bar	10-150 mm		In Stock
Other sizes and custom profiles available upon request			

Solid Round Bar

Metric Sizes	Kg/MTR	Tolerances	Metric Sizes	Kg/MTR	Tolerances
10mm	0.35	+/-0.15mm	55mm	10.55	+0.79mm/-0
12mm	0.51	+/-0.18mm	60mm	12.55	+0.79mm/-0
16mm	0.90	+/-0.20mm	65mm	14.73	+1.19mm/-0
20mm	1.40	+/-0.20mm	70mm	17.08	+1.19mm/-0
25mm	2.18	+/-0.23mm	75mm	19.61	+1.19mm/-0
30mm	3.14	+/-0.28mm	80mm	22.30	+1.19mm/-0
35mm	4.28	+/-0.36mm	90mm	28.22	+1.59mm/-0
40mm	5.59	+/-0.40mm	100mm	34.84	+1.59mm/-0
45mm	7.07	+/-0.40mm	130mm	59.50	+1.98mm/-0
50mm	8.72	+/-0.40mm >	150mm	79.09	+3.18mm/-0



Physical Properties

Material	Metric Values	Imperial Values
Thermal Conductivity	7.2	W.m -1.°K-1
Volume Electrical Resistivity	170	Ohm.cm
Mean coefficient of Thermal Expansion (0-100°C)	8.6 × 10-6	°C
Mean coefficient of Thermal Expansion (0-300°C)	9.2 × 10-6	°C
Density	4.42	g/cm3
Specific Heat	560	J.kg-1.°K-1

Mechanical properties

Property	Metric	Imperial
Area in reduction	20%	20%
Tensile strength, Ultimate	897-1000 MPa	130000-145000 psi
Elastic Modulus	114000 MPa	1700000 psi
0.2% Proof stress	828-910 MPa	120000-13000 psi
Elongation over 2 inches	10-18%	10-18%
Hardness Rockwell C	36	36





INCONEL® Alloy 718

(UNS N07718/W.Nr. 2.4668)

Key Features

- ★ Excellent corrosion resistance
- ★ Easy to fabricate complex shapes
- ★ Sluggish age-hardening response
- ★ High strength
- ★ Good weldability

Common Applications

- + Valves
- + Mandrels
- + Wellhead completion equipment
- + Aircraft ducting system
- + Flare stacks
- + Turbine shroud rings
- + Seawater components
- + Bellow and expansion joints
- + Jet engine exhaust system
- + Gas turbine engines
- + Rocket motors
- + Nuclear reactors and space crafts

Overview

INCONEL® alloy 718 exhibits outstanding corrosion resistant properties over a wide range of temperature (-423°F to 1300°F), and it has excellent durability. This special alloy material has exceptional performance efficiency even in the harsh chemical environment containing chlorides and sulfides.

Along with its good physical, chemical, and mechanical properties, it has a unique property of age-hardening, which means that it can be easily fabricated into complex shapes according to your requirements. It is widely used for high strength applications and has the ability to retain its properties even at elevated temperature. The high strength of INCONEL® alloy 718 including good fatigue, creep, rupture and tensile strength have expended the areas of its application to various industrial sectors.

Material Profile

Profile	Metric Values	Imperial Values	Availability
● Round Bar*	10-300 mm		2-6 weeks
Other sizes and custom profiles available upon request			
*Solution Annealed & Aged			

Chemical Composition

Element	Symbol	Range %
Carbon	C	0.08 maximum
Chromium	Cr	17.00-21.00
Aluminum	Al	1.00 maximum
Nickel (Plus Cobalt)	Ni	50.00-55.00
Iron	Fe	Balance*
Niobium (plus Tantalum)	Nb	4.75-5.50
Molybdenum	Mo	2.80-3.30
Titanium	Ti	0.65-1.15
Copper	Cu	0.30 maximum
Boron	B	0.006 maximum
Sulfur	S	0.015 maximum
Phosphorus	P	0.015 maximum
Silicon	Si	0.35 maximum
Manganese	Mn	0.35 maximum

Physical Properties

Material	Metric Values	Imperial Values
Thermal Conductivity	11.4	W.m -1.°K-1
Electrical Resistivity	1.32	μohm/cm
Thermal Expansion	13	μm/m-°C
Density	8.19	g/cm3
Specific Heat (0-100 C)	435	J.kg-1.°K-1

Mechanical properties

Property	Metric	Imperial
Tensile strength, ultimate at elevated temperature	1100 MPa	160000 psi
Tensile strength, Ultimate	1375 MPa	199000 psi
Tensile strength, yield at elevated temperature	980 MPa	142000 psi
Tensile strength, Yield	1100 MPa	160000 psi
Elongation at break at elevated temperature	18%	18%
Elongation at break	25%	25%



Global Locations

New Zealand Head Office

📍 20 Kaimanawa Street
Palmerston North, 4414

📞 0800 789 987
📠 06 354 5753

✉️ sales@kormax.co.nz

United States

📍 101 N Tryon, Suites 112/6000
Charlotte, NC 28246

📞 +1-7084334160
✉️ customercare@kormaxdesign.com

Australia

📍 29 Prime Drive, Seven Hills,
Sydney, NSW, 2147

📞 02 9061 8931
✉️ customercare@kormax.com.au

Manufacturing Locations

Ohio, USA
Mannheim, Germany
Michigan, USA
Lombardy, Italy
Oregon, USA
Kocaeli, Turkey
Denmark
Rajkot, India

Other Locations

Fresno, CA, USA
Sao Paulo, Brazil