

TYPICAL APPLICATIONS

Marine propeller & pump shafts
Mechanical components in Oil & Gas equipment
Aircraft components
Valve stems and trim
Bearings & bushes
Fasteners
Gears
Flanges

PRODUCT DESCRIPTION

Nickel aluminium bronze is a complex copper based alloy containing 10% aluminium, 5% nickel and 5% iron. This type of alloy combines high mechanical strength (can be equivalent to medium carbon steel) and hardness with good ductility, corrosion resistance and wear resistance. The high mechanical strength is maintained to a marked degree at temperatures up to 400°C.

The various specifications which cover this alloy type can be selected to give a different balance between strength, elongation and notch ductility.

Nickel aluminium bronze (NAB) has a density of 7.50 g/cc and a magnetic permeability of 1.5 relative to air.

CORROSION RESISTANCE

High corrosion resistance in seawater and other chloride containing environments. The type of alloy offers immunity to chloride stress corrosion cracking.

ALLOY ATTRIBUTES

High mechanical strength
Excellent corrosion resistance in marine environments
High resistance to cavitation erosion
High wear resistance
Resistant to scaling up to 1000°C
Good damping properties
Resistance to fatigue
Useful thermal conductivity
Good bearing properties

SPECIFICATIONS

BS B23 (formerly DTD 197A)
BS 2872/4Bb BS 2872/4 CA104
BS EN CW307G (CuAl10Fe5Ni5)
DEF STAN 02-833 (formerly NES 833/DGS 1043/DGS 8452A)
AMS 4640
ASTM B150 C63000 and C63200
QQ-C-465
BS 1400 AB2

WELDABILITY

This alloy type is fully weldable

MACHINABILITY

Good (recommendations available)

AVAILABILITY

Bar, tube, plate, forgings

CHEMICAL COMPOSITION (WEIGHT %)

	Cu	Al	Fe	Ni	Mn	Mg	Pb	Si	Sn	Zn
Min	Bal	8.00	4.00	4.00						
Max	Bal	11.00	6.00	6.00	0.50	0.10	0.05	0.25	0.20	0.50

TYPICAL MECHANICAL PROPERTIES (actual properties according to specification chosen)

UTS, MPa	650-805
0.2% PS, MPa	245-530
Elongation, %	10-17
Hardness, HBN	179-240
Notch Impact, J	16.5-40.5

TECHNICAL SALES ASSISTANCE

Our resident team of qualified metallurgists and engineers will be pleased to assist further on any technical topic.

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