

Ultra High Strength Bronze

Typical Applications

- Aircraft landing gear
- Shafts & pumps
- Gears
- Ship building components
- Marine shafts and bolting
- Valve components
- Thrust washers in high performance IC engines
- Mechanical seals
- Subsea hydraulic & electrical connectors

Product Description

ULTIBRON™ -NB by Smiths Metal Centres Ltd - our own brand of extra high strength copper nickel alloy which also offers outstanding corrosion resistance. ULTIBRON™ -NB, also often referred to as a nickel bronze, benefits from the addition of aluminium, manganese and iron to give the alloy a microstructure with an exceptional suite of material characteristics. This high performance alloy boasts a mechanical strength exceeding that of nickel aluminium bronze and this is achieved in the 'as supplied' condition to the benefit of the user. The overall property combination makes the material highly suitable for use in a diverse range of extreme environments, particularly in the marine, offshore oil and gas and aerospace markets.

Weldability

Good weldability

Key features:

- Very high mechanical properties
- High wear resistance
- Outstanding corrosion resistance in marine applications
- No loss of impact strength down to minus 196 °C
- Hydrogen embrittlement resistance
- Outstanding anti-galling properties
- Good thermal and electrical conductivity
- Very low magnetic permeability
- Excellent biofouling resistance

Related material specifications

- Manufactured in accordance with DTD900-4805
- DIN 2.1504
- Cu15Ni3Al

Corrosion Resistance

Outstanding corrosion resistance in marine environments which is superior to aluminium bronzes and both 90/10 and 70/30 cupronickels.

Availability

Round bar

Machinability

Good

Chemical Composition (weight %)

	Ni	Al	Fe	Mn	Cr	Zn	Sn	Mg	Si	Pb	Cu
Min	13.00	2.00	0.60	0.10							
Max	16.00	3.00	1.50	0.50	0.50	0.30	0.20	0.10	0.10	0.05	Bal

Mechanical Properties (minima)

	Ø ≤50mm dia	50mm < Ø ≤80mm dia.	80mm < Ø
0.2% Proof Stress	630 N/mm ²	600 N/mm ²	555 N/mm ²
Ultimate Tensile Strength	830 N/mm ²	780 N/mm ²	770 N/mm ²
Elongation	10%	10%	10%
Hardness	240 HB	225 HB	225 HB

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

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