



Copper and Copper Alloys - DEF STAN 02-838 ~ NES838 Bar

SPECIFICATIONS

Commercial	NES838 DEF STAN 838
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A Phosphor Bronze Alloy with high strength and very high corrosion resistance especially in sewer and marine environments. Mainly used in Naval Engineering, Nuclear, Aerospace and Defence Applications.

CHEMICAL COMPOSITION

DEFSTAN 02-838(PT1)/1(2012) Phosphor Bronze	
Element	% Present
Tin (Sn)	4 - 5.5
Phosphorous (P)	0.02 - 0.4
Nickel (Ni)	0.3 max
Silicon (Si)	0.3 max
Zinc (Zn)	0.3 max
Iron (Fe)	0.1 max
Lead (Pb)	0.02 max
Copper (Cu)	Balance

ALLOY DESIGNATIONS

DEF STAN 02-838
NES838
NES 838
DEF STAN 838

TEMPER TYPES

ANNEALED

SUPPLIED FORMS

Annealed Bar - Grade 1

- Bar
- Rod

MECHANICAL PROPERTIES

DEFSTAN 02-838(PT1)/1(2012) Bar 6mm to 18mm	
Property	Value
Proof Stress	410 Min MPa
Tensile Strength	500 Min MPa
Elongation A	12 Min %

Mechanical Properties shown are for annealed bar.

DEFSTAN 02-838(PT1)/1(2012) Bar 18mm to 40mm	
Property	Value
Proof Stress	380 Min MPa
Tensile Strength	460 Min MPa
Elongation A	12 Min %

Mechanical Properties shown are for annealed bar.

DEFSTAN 02-838(PT1)/1(2012) Bar 40mm to 60mm	
Property	Value
Proof Stress	320 Min MPa
Tensile Strength	380 Min MPa
Elongation A	16 Min %

Mechanical Properties shown are for annealed bar.

DEFSTAN 02-838(PT1)/1(2012) Bar Over 60mm	
Property	Value
Proof Stress	250 Min MPa
Tensile Strength	350 Min MPa
Elongation A	18 Min %

Mechanical Properties shown are for annealed bar.



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CONTACT

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REVISION HISTORY

Datasheet Updated	13 November 2018
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DISCLAIMER

This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

Please note that the 'Datasheet Update' date shown above is no guarantee of accuracy or whether the datasheet is up to date.

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Material supplied by the Company may vary significantly from this data, but will conform to all relevant and applicable standards.

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