

Nickel Alloys

Alloy 400 Bar & Forgings

Datasheet Updated
05 August 2021

RANGE

Product Form	Size Range
Round Bar NA13 2.4360 UNS N04400	3/4" - 4"

SPECIFICATIONS

Commercial	Alloy 400
------------	-----------

A nickel copper grade, that combines high strength and corrosion resistance.

CHEMICAL COMPOSITION

ASTM B164-03
Alloy 400

Element	% Present
Nickel (Ni)	63.00 - 0.00
Copper (Cu)	28.00 - 34.00
Carbon (C)	0.00 - 0.30
Iron (Fe)	0.00 - 2.50
Manganese (Mn)	0.00 - 2.00
Silicon (Si)	0.00 - 0.50
Sulphur (S)	0.00 - 0.02

ALLOY DESIGNATIONS

- ASTM B164-03 (2014)/UNS NO4400
- BS3076 NA13
- NACE MR0175/0103

SUPPLIED FORMS

- Bar
- Forgings
- Rod

APPLICATIONS

- Pump and valve components
- Electrical components
- Marine hardware and fixtures
- Shafts
- Heat exchangers
- Electrical and electronic components
- Boiler feedwater heaters
- Fresh and salt water tanks
- Process vessels and piping

CHARACTERISTICS

- Excellent corrosion resistance in marine environments
- High strength and hardness
- Broad temperature range
- Easily processed and machined
- Resistant to chloride stress corrosion
- Readily weldable

MECHANICAL PROPERTIES

ASTM B164-03

Round Bar - Hot Worked, Annealed

Property	Value
Proof Stress	170 Min MPa
Tensile Strength	480 Min MPa
Elongation A50 mm	35 Min %

ASTM B164-03

Round Bar - Cold Worked/Stress Relieved Under 12.7mm Dia

Property	Value
Proof Stress	345 Min MPa
Tensile Strength	580 Min MPa
Elongation A50 mm	10 Min %

ASTM B164-03

Round Bar - Cold Worked/Stress relieved 12.7mm to 88.9mm Dia

Property	Value
Proof Stress	415 Min MPa
Tensile Strength	600 Min MPa
Elongation A50 mm	20 Min %

ASTM B164-03

Round Bar - Cold Worked/Stress relieved 88.9mm to 101.6mm Dia

Property	Value
Proof Stress	380 Min MPa
Tensile Strength	580 Min MPa
Elongation A50 mm	20 Min %

ASTM B164-03

Round Bar - Hot Worked, Annealed

Property	Value
Proof Stress	170 Min MPa
Tensile Strength	480 Min MPa
Elongation A50 mm	35 Min %

ASTM B164-03

Round Bar - Hot Worked, Annealed

Property	Value
Proof Stress	170 Min MPa
Tensile Strength	480 Min MPa
Elongation A50 mm	35 Min %

ASTM B164-03

Round Bar - Hot Worked, Annealed

Property	Value
Proof Stress	170 Min MPa
Tensile Strength	480 Min MPa
Elongation A50 mm	35 Min %

ASTM B164-03

Round Bar - Hot Worked, Annealed

Property	Value
Proof Stress	170 Min MPa
Tensile Strength	480 Min MPa
Elongation A50 mm	35 Min %

ASTM B164-03

Round Bar - Hot Worked, Annealed

Property	Value
Proof Stress	170 Min MPa
Tensile Strength	480 Min MPa
Elongation A50 mm	35 Min %

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.

The information provided in this datasheet has been drawn from various recognised sources, including EN Standards, recognised industry references (printed & online) and manufacturers' data. No guarantee is given that the information is from the latest issue of those sources or about the accuracy of those sources. Material supplied by the Company may vary significantly from this data but will conform to all relevant and applicable standards. As the products detailed may be used for a wide variety of purposes and as the Company has no control over their use; the Company specifically excludes all conditions or warranties expressed or implied by statute or otherwise as to dimensions, properties and/or fitness for any particular purpose, whether expressed or implied. Advice given by the Company to any third party is given for that party's assistance only and without liability on the part of the Company. All transactions are subject to the Company's current Conditions of Sale. The extent of the Company's liabilities to any customer is clearly set out in those Conditions; a copy of which is available on request.