

FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

Application Segments

Oil & Gas/CPI

Land Based Turbines

Available Product Variants

Long Products*

Semi-Finished Products / Billet

Open Die Forgings

*) Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Product Description

BÖHLER N400 is a stainless soft martensitic Cr steel with 4% nickel with molybdenum addition and medium corrosion resistance in media with only a low chloride content. To achieve the best possible corrosion resistance with BÖHLER N400, it is essential to polish the surfaces concerned. Good mechanical properties in the quenched and tempered condition. This makes this material very suitable for use in turbine and power plant construction. Very good low-temperature properties. Recommended temperature of use: - 60 to 350°C. Use for valves, pumps, compressors, centrifuges, hydroelectric machines, turbines, reactor technology, shipbuilding, chemicals. Special heat treatment to max. 23 HRC is required for sour gas environment in petroleum engineering.

Process Melting

Airmelted

Applications

- > Blades & Shafts for Turbines and Compressors
- > Comps. for Food processing and Animal Feed
- > General Components for Mechanical Engineering
- > Other Components
- > Power Generation (Gas/Steam/ Nuclear)
- > Steam Valves
- > Water Power
- > Comp. for Chemical plants (incl. LNG, FGD, Urea, LDPE, etc.)
- > Food processing Industry
- > Mechanical Engineering
- > Other Oil and Gas + CPI comps.
- > Pumps and High Pressure Components
- > Tubular Products, Flanges, Fittings
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs
- > Comp. for Industrial Gas Compressors
- > Forging Applications
- > Oil & Gas
- > Other Power Generation Components
- > Shafts
- > Valves and Actuators
- > CPI (incl. LNG, Urea)

Technical data

| Material designation | | Standards | |
|----------------------|--------------|------------|--------|
| F6NM | Market grade | 10088-3 | EN ISO |
| 1.4313 | SEL | A182/A182M | ASTM |
| X3CrNiMo13-4 | EN | | |
| S41500 | UNS | | |

Chemical composition (wt. %)

| C | Si | Mn | P | S | Cr | Mo | Ni | N |
|-----------|-----------|-----------|------------|------------|--------------|--------------|------------|------------|
| max. 0.05 | max. 0.70 | max. 1.50 | max. 0.040 | max. 0.015 | 12.0 to 14.0 | 0.30 to 0.70 | 3.5 to 4.5 | min. 0.020 |

Refers to EN ISO 10088-3 1.4313

Delivery condition

Annealed

| | |
|------------------------------|------------------|
| Hardness (HB) | max. 320 |
| Tensile Strength (MPa ksi) | max. 1,100 160 |

Hardened and Tempered | QT700

| | |
|------------------------------|-------------------------|
| Tensile Strength (MPa ksi) | 700 to 850 102 to 124 |
| Yield Strength (MPa ksi) | min. 520 76 |

Hardened and Tempered | QT780

| | |
|------------------------------|-------------------------|
| Tensile Strength (MPa ksi) | 780 to 980 114 to 143 |
| Yield Strength (MPa ksi) | min. 620 90 |

Hardened and Tempered | QT900

| | |
|------------------------------|---------------------------|
| Tensile Strength (MPa ksi) | 900 to 1,100 131 to 160 |
| Yield Strength (MPa ksi) | min. 800 117 |

Round Bars and Wire Rod (if any)

| mm | | Diameter | | inch | |
|---------------|---|----------|-------|------|--------|
| | | mm | inch | | |
| ROLLED | | | | | |
| 12.50 | - | 130.00 | 0.492 | - | 5.118 |
| FORGED | | | | | |
| 130.10 | - | 1,040.00 | 5.122 | - | 40.945 |

More information regarding MOQ, lengths and tolerances upon request. Flat bars on request.

Long Products: For additional specifications, technical requirements, and other dimensions, please contact our regional voestalpine BÖHLER sales companies.

Open Die Forgings: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Open Die Forgings of voestalpine BÖHLER Edelstahl GmbH & Co KG.

Semi-Finished Products: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Semi Finished Products of voestalpine BÖHLER Edelstahl GmbH & Co KG.

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