

# CORROSION RESISTANT STEELS - MARTENSITIC, SEMI- MARTENSITIC AND FERRITIC STEELS

## Application Segments

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Oil & Gas/CPI

Land Based Turbines

## Available Product Variants

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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

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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

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Airmelted

## Applications

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- > Blades & Shafts for Turbines and Compressors
- > Food processing industry
- > Other Oil and Gas + CPI components
- > Pumps and High Pressure Components
- > Tubular Products, Flanges, Fittings
- > Wellhead, X-mas trees and Manifolds (incl. Tubing hangers), BOPs
- > Components for Industrial Gas Compressors
- > General Components for Mechanical Engineering
- > Other Power Generation Components
- > Shafts
- > Valves and Actuators
- > CPI (incl. LNG, Urea)
- > Components for food processing and animal feed
- > Mechanical Engineering
- > Power Generation (Gas/Steam/Nuclear)
- > Steam Valves
- > Water Power
- > Chemical industry - general

### 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)	max. 1,100

#### Hardened and Tempered | QT700

Tensile Strength (MPa)	700 to 850
Yield Strength (MPa)	min. 520

#### Hardened and Tempered | QT780

Tensile Strength (MPa)	780 to 980
Yield Strength (MPa)	min. 620

#### Hardened and Tempered | QT900

Tensile Strength (MPa)	900 to 1,100
Yield Strength (MPa)	min. 800

### Round Bars and Wire Rod (if any)

Diameter		mm	
<b>ROLLED</b>			
12.50	-	130.00	
<b>FORGED</b>			
130.10	-	1,040.00	

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

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If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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