

CORROSION RESISTANT STEELS - MARTENSITIC PRECIPITATION HARDENING (PH) STEELS

Application Segments

Aerospace

Available Product Variants

Long Products*

Semi-Finished Products / Billet

Plates

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

Product Description

BÖHLER N701 is a high quality, vacuum remelted, corrosion resistant steel for aerospace applications in the form of bars for machining up to 200 mm in diameter.

It is a martensitic, precipitation hardenable chromium-nickel-copper steel with high strength and toughness.

These products are typically used for parts that require corrosion resistance, high strength up to 600 °F, and exhibit good toughness & strength in the transverse direction of large dimensions. However, use is not limited to such applications.

Certain processing methods and operating conditions can cause these products to become susceptible to Stress corrosion cracking.

Process Melting

Airmelted + VAR

Applications

- > Other Aerospace Components
- > Mechanical Engineering
- > Structural parts (Aerospace)
- > Fasteners, Bolts, Nuts
- > Components
- > Shafts for Mechanical Engineering

Technical data

Material designation		Standards	
15-5 PH	Market grade	2817	EN
1.4545	SEL		
X5CrNiCu15-5	EN		
FE-PM 1802			
S15500	UNS		

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb
max. 0.07	max. 1.00	max. 1.00	max. 0.030	max. 0.015	14.0 to 15.5	max. 0.50	3.5 to 5.5	2.5 to 4.5	5xC to 0.45

Related to EN 2817

Delivery condition

Solution annealed	
Hardness (HB)	max. 363 Bars for machining

Solution annealed + precipitation hardened	
Hardness (HB)	331 to 401 Bars for machining
Tensile Strength (MPa)	min. 1,070
Yield Strength (MPa)	min. 1,000

Round Bars and Wire Rod (if any)

Diameter mm		MOQ ex mill kg		Length m			Tolerance
ROLLED							
5.01	-	12.49	1,100	3.00	-	4.00	IT h/k 11
12.50	-	55.00	1,200	3.00	-	4.00	IT h/k 11
55.01	-	120.00	2,300	3.00	-	4.00	IT h/k 11
120.01	-	140.00	2,300	3.00	-	5.00	IT h/k 14
FORGED							
140.01	-	203.20	2,350	2.00	-	5.00	IT h/k 14
203.21	-	304.80	3,500	2.00	-	5.00	IT h/k 14

Flat Bars

Width mm		Thickness mm		MOQ ex mill kg		Length m			Tolerance	
ROLLED										
15.00	-	121.00	0.31	-	3.39	1,300	3.00	-	4.00	LN 1017
120.00	-	150.00	0.98	-	3.35	2,550	3.00	-	4.00	LN 1017
150.00	-	275.00	0.79	-	3.94	2,550	3.00	-	4.00	LN 1017
275.00	-	330.00	0.98	-	3.15	2,550	3.00	-	4.00	LN 1017

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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