

FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

Application Segments

Aerospace
Engineering

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

This specification covers a premium aircraft-quality corrosion-resistant steel in the form of bars, wire, forgings up to 12.0 inches (305 mm) in diameter or least distance between parallel sides in the solution heat treated condition and stock of any size for forging.

It is a martensitic precipitation hardenable chromium-nickel-copper steel possessing high strength and toughness. Further strength increments can be obtained by cold forming, followed by a precipitation hardening treatment.

These products have been used typically for parts requiring corrosion resistance and high strength up to 600 °F (316 °C) with good ductility and strength in the transverse direction in large section sizes but, but usage is not limited to such applications.

Certain processing procedures and service conditions may cause these products to become subject to stress-corrosion cracking.

Process Melting

Airmelted + VAR

Applications

> Aerospace
> Other Aerospace Comps.
> Structural parts (Aerosp)

Technical data

Material designation		Standards	
15-5 PH	Market grade	A564	ASTM
1.4545	SEL	5659	AMS
X5CrNiCu15-5	EN		
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	14.00 to 15.50	max. 0.50	3.50 to 5.50	2.50 to 4.50	5xC to 0.45

Related to AMS 5659 type 1

Delivery condition

Solution annealed

Hardness (HB)	max. 363 bars, hot or cold finished, forgings
Tensile Strength (MPa ksi)	max. 1,207 176 for wire products

Round Bars and Wire Rod (if any)

Diameter				MOQ ex mill		Length				Tolerance				
mm		inch		kg	lbs	m		ft						
ROLLED														
5.01	-	12.49	0.197	-	0.492	1,100	2,425	3.00	-	4.00	9.84	-	13.12	IT h/k 11
12.50	-	55.00	0.492	-	2.165	1,200	2,646	3.00	-	4.00	9.84	-	13.12	IT h/k 11
55.01	-	120.00	2.166	-	4.724	2,300	5,071	3.00	-	4.00	9.84	-	13.12	IT h/k 11
120.01	-	140.00	4.725	-	5.512	2,300	5,071	3.00	-	5.00	9.84	-	16.40	IT h/k 14
FORGED														
140.01	-	203.20	5.512	-	8.000	2,350	5,181	2.00	-	5.00	6.56	-	16.40	IT h/k 14
203.21	-	304.80	8.000	-	12.000	3,500	7,716	2.00	-	5.00	6.56	-	16.40	IT h/k 14

Flat Bars

Width				Thickness				MOQ ex mill		Length				Tolerance						
mm		inch		mm		inch		kg	lbs	m		ft								
ROLLED																				
15.00	-	121.00	0.591	-	4.764	8.00	-	86.00	0.315	-	3.386	1,300	2,866	3.00	-	4.00	9.84	-	13.12	LN 1017
120.00	-	150.00	4.724	-	5.906	25.00	-	85.00	0.984	-	3.346	2,550	5,622	3.00	-	4.00	9.84	-	13.12	LN 1017
150.00	-	275.00	5.906	-	10.827	20.00	-	100.00	0.787	-	3.937	2,550	5,622	3.00	-	4.00	9.84	-	13.12	LN 1017
275.00	-	330.00	10.827	-	12.992	25.00	-	80.00	0.984	-	3.150	2,550	5,622	3.00	-	4.00	9.84	-	13.12	LN 1017

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

Sheet & Plates: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche 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.

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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