

FERRITIC AND MARTENSITIC STEELS, INCL. PRECIPITATION HARDENING STEELS

Available Product Shapes

[Long Products](#)
[Semi-Finished Products / Billet](#)
[Plates](#)
[Open Die Forgings](#)

Product Description

This specification covers a 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-molybdenum steel possessing high strength and toughness.

Primarily for parts requiring corrosion resistance approximating that of Cr-Ni 18-8 type steels and high strength exceeding that of 12Cr martensitic type steels up to 700 °F (371 °C), but usage is not limited to such applications. This steel can be used in the solution heat treated condition and is capable of being precipitation heat treated to tensile strengths as high as 180 ksi (1241 MPa) with good ductility and strength in the transverse directions in large section sizes.

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

Process Melting

[Airmelted](#)

Applications

[> Aerospace](#)
[> Other Aerospace Comps.](#)
[> Structural parts \(Aerosp\)](#)

Technical data

Material designation		Standards	
S143	Market grade	S143	
		S144	BS
		S145	

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Nb
max. 0.07	max. 0.60	max. 1.00	max. 0.035	max. 0.025	13.2 to 14.7	1.20 to 2.00	5.0 to 5.8	1.20 to 2.00	0.10 to 0.40

Related to BS S143

Delivery condition

Solution annealed	
Hardness	max. 331 HB bars, billets and forging stock for subsequent working(S143A)
Solution annealed + precipitation hardened	
Hardness	277 to 341 HB Black and bright bars for machining(S143B, S143D) and subsequently cold drawn, cold rolled, machined or ground, forgings(S143C)
Tensile Strength	930 134.88 to 1,080 156.635 N/mm ² KSI
Yield Strength	min. 780 113.125 N/mm ² KSI

Available Dimensions

Round Bars

Diameter		MOQ ex mill		Length		Tolerance
mm	inch	kg	lbs	m	ft	
ROLLED						
5.01	- 12.49	0.197	- 0.492	850	1,874	3.00 - 4.00 9.84 - 13.12 IT h/k 11
12.50	- 55.00	0.492	- 2.165	900	1,984	3.00 - 4.00 9.84 - 13.12 IT h/k 11
55.01	- 69.00	2.166	- 2.717	1,180	2,601	3.00 - 4.00 9.84 - 13.12 IT h/k 11
69.01	- 72.00	2.717	- 2.835	900	1,984	3.00 - 4.00 9.84 - 13.12 IT h/k 11
72.01	- 82.00	2.835	- 3.228	900	1,984	3.00 - 4.00 9.84 - 13.12 IT h/k 11
82.01	- 120.00	3.229	- 4.724	900	1,984	3.00 - 4.00 9.84 - 13.12 IT h/k 11
120.01	- 130.00	4.725	- 5.118	900	1,984	3.00 - 5.00 9.84 - 16.40 IT h/k 14
FORGED						
130.01	- 203.20	5.119	- 8.000	1,320	2,910	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	1,100 2,425 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	1,100 2,425 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	1,100 2,425 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	1,100 2,425 3.00 - 4.00 9.84 - 13.12 LN 1017

For more information see www.voestalpine.com/boehler-edelstahl

For additional specifications and other sizes please contact BÖHLER Edelstahl - Special Materials Aerospace & Land Based Turbine

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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ONE STEP AHEAD.