

# CREEP RESISTANT 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 T670 is 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 12% Cr martensitic type steels, 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 157 ksi (1080 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 Components

> Structural parts (Aerospace)

## Technical data

Material designation		Standards	
S143	Market grade	S143	BS
		S144	
		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 (HB)	max. 331   bars, billets and forging stock for subsequent working(S143A)
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### Solution annealed + precipitation hardened

Hardness (HB)	277 to 341   Black and bright bars for machining(S143B, S143D) and subsequently cold drawn, cold rolled, machined or ground, forgings(S143C)
Tensile Strength (MPa)	930 to 1,080
Yield Strength (MPa)	min. 780

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

Diameter mm			MOQ ex mill kg		Length m			Tolerance	
ROLLED									
5.01	-	12.49	850		3.00	-	4.00	IT h/k 11	
12.50	-	55.00	900		3.00	-	4.00	IT h/k 11	
55.01	-	69.00	1,180		3.00	-	4.00	IT h/k 11	
69.01	-	72.00	900		3.00	-	4.00	IT h/k 11	
72.01	-	82.00	900		3.00	-	4.00	IT h/k 11	
82.01	-	120.00	900		3.00	-	4.00	IT h/k 11	
120.01	-	130.00	900		3.00	-	5.00	IT h/k 14	
FORGED									
130.01	-	203.20	1,320		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	8.00	-	86.00	1,100		3.00	-	4.00	LN 1017	
120.00	-	150.00	25.00	-	85.00	1,100		3.00	-	4.00	LN 1017	
150.00	-	275.00	20.00	-	100.00	1,100		3.00	-	4.00	LN 1017	
275.00	-	330.00	25.00	-	80.00	1,100		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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 ONE STEP AHEAD.