

ENGINEERING STEELS - HEAT TREATABLE AND NITRIDING STEELS

Application Segments

Aerospace

Available Product Variants

Long Products

Product Description

BÖHLER V118S1 is a premium aircraft-quality, low-alloy Ni-Cr-Mo steel in the form of bars, forgings and forging stock requiring high tensile and toughness values, particular in large cross sections in the hardened and tempered condition. The molybdenum addition prevents the steel from being susceptible to temper brittleness.

These products have been used typically for parts requiring a through-hardening capability up to 6 inches (152,4 mm) in nominal thickness at time of heat treatment but usage is not limited to such applications.

Process Melting

Airmelted

Applications

> Structural parts (Aerospace)

> Other Aerospace Components

Technical data

Material designation		Standards	
S98	Market grade	S98	BS
1.6745	SEL	S99	
40NiMoCr10-5	EN		

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Al
0.36 to 0.44	0.10 to 0.35	0.45 to 0.7	max. 0.025	max. 0.015	0.5 to 0.8	0.45 to 0.65	2.3 to 2.8	0.015 to 0.050

Related to BS S98

Delivery condition

Hardened and Tempered	
Hardness (HB)	341 to 388 S98D, bright bars up to 152.4mm diameter
Tensile Strength (MPa)	1,158 to 1,313
Yield Strength (MPa)	min. 1,004

Hardened and Tempered	
Hardness (Unit)	341 to 388 S98B, black bars up to 152.4mm diameter
Tensile Strength (MPa)	1,158 to 1,313
Yield Strength (MPa)	min. 1,004

Round Bars and Wire Rod (if any)

Diameter mm		MOQ ex mill kg	Length m		Tolerance
ROLLED					
5.01	- 12.49	750	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	1,200	3.00	- 4.00	IT h/k 11
69.01	- 72.00	1,000	3.00	- 4.00	IT h/k 11
72.01	- 82.00	1,150	3.00	- 4.00	IT h/k 11
82.01	- 120.01	1,400	3.00	- 4.00	IT h/k 11
120.01	- 145.00	1,400	3.00	- 5.00	IT h/k 14

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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