HEAT TREATABLE STEELS AND PRECIPITATION HARDENING STEELS

Application Segments

Aerospace

Available Product Variants

Long Products* | Semi-Finished Products / Billet

* Information and data presented in this Data-Sheet refers to the indicated Product Shape only. For information on further Product Shapes mentioned above please contact the regional BOHLER sales representative.

Product Description

This specification covers 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 (Aerosp)

Technical data

Material designation	
1.6745	SEL
S98	Market grade

Standards	
S98	BS
S99	

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	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	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 | ksi)	1,158 to 1,313 | 168 to 191
Yield Strenght (MPa | ksi)	1,004 | 146

Hardened and Tempered	
Hardness (Unit)	341 to 388 | S98B, black bars up to 152.4mm diameter
Tensile Strength (MPa | ksi)	1,158 to 1,313 | 168 to 191
Yield Strenght (MPa | ksi)	1,004 | 146

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	750	1,653	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	1,200	2,646	3.00	-	4.00	9.84 - 13.12	IT h/k 11
69.01	-	72.00	2.717	-	2.835	1,000	2,205	3.00	-	4.00	9.84 - 13.12	IT h/k 11
72.01	-	82.00	2.835	-	3.228	1,150	2,535	3.00	-	4.00	9.84 - 13.12	IT h/k 11
82.01	-	120.01	3.229	-	4.725	1,400	3,086	3.00	-	4.00	9.84 - 13.12	IT h/k 11
120.01	-	145.00	4.725	-	5.709	1,400	3,086	3.00	-	5.00	9.84 - 16.40	IT h/k 14

For more information see https://www.voestalpine.com/bohler-edelstahl/de/

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 bebound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate frompractical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

voestalpine BÖHLER Edelstahl GmbH & Co KG
Mariazeller Straße 25
8605 Kapfenberg, AT
T. +43/50304/20-0
E. info@bohler-edelstahl.at
https://www.voestalpine.com/bohler-edelstahl/de/

voestalpine
ONE STEP AHEAD.