

HEAT TREATABLE STEELS AND PRECIPITATION HARDENING STEELS

Available Product Shapes

[Long Products](#)
[Round Bar](#)

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

Technical data

Standards	
S97	BS
S140	
S154	
S97	Market grade

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Al
0.27 to 0.35	0.15 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 S97

Delivery condition

Annealed	
Hardness	max. 277 HB S97A billets and bars for forging
Hardened and Tempered	
Hardness	293 to 341 HB S97 B and D bright bars for further processing, S97C forgings
Tensile Strength	1,004 145.613 to 1,158 167.948 N/mm ² KSI
Yield Strength	min. 850 123.278 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	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	-	120.00	3.229	-	4.724	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 www.voestalpine.com/boehler-edelstahl

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

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ONE STEP AHEAD.