

BEARING STEELS

Application Segments

Aerospace

Available Product Variants

Long Products

Product Description

This specification covers a premium aircraft-quality, double vacuum-melted low-alloy steel in the form of bars, forgings and forging stock.

It is used typically for parts such as bearings operating under heavy loads and high speeds at moderate temperatures up to 600° F. E.g. bearings and rolling elements, bearing balls and races.

Process Melting

VIM + VAR

Applications

[Bearing](#)
[Turbine and Engine Parts \(Aerospace\)](#)
[Other Aerospace Components](#)

Technical data

Material designation		Standards	
M50	Market grade	6491	AMS
1.3551	SEL		
80MoCrV42-16	EN		

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	V	W	Cu	Co
0.80 to 0.85	max. 0.25	0.15 to 0.35	max. 0.015	max. 0.008	4.00 to 4.25	4.00 to 4.50	max. 0.15	0.90 to 1.10	max. 0.25	max. 0.10	max. 0.25

Related to AMS 6491

Delivery condition

Annealed

Hardness (HB)	max. 248 Cold finished and annealed, above 12.7 mm diameter
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Annealed

Hardness (HB)	max. 229 Hot finished and annealed, above 12.7 mm diameter
Tensile Strength (MPa)	max. 825 Cold finished and annealed, max 12.7 mm diameter

Round Bars and Wire Rod (if any)

Diameter mm			MOQ ex mill kg	Length m			Tolerance
ROLLED							
12.30	-	55.00	1,250	3.00	-	4.00	IT h/k 11
55.01	-	120.00	1,400	3.00	-	4.00	IT h/k 11
120.01	-	140.00	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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 ONE STEP AHEAD.